IMMERSIVE FUTURE

inSonic 2017 — das Festival
zu immersiven Zukunftstechnologien

Symposium | Konzerte | Installationen | Workshops

07.-10.12.2017

//////// ZKM zkm karlsruhe

Editorial

The ZKM | Karlsruhe, the Parisian Institut de Recherche et Coordination Acoustique/Musique (IRCAM) and the Karlsruhe University of Arts and Design (HfG) want to encourage a critical discourse about new, immersive future technologies. In the framework of the Interfaces project and with the support of the European Union's Creative Europe Program, the »inSonic2017: Immersive Future« festival will take place at the ZKM between 7th and 10th December. As part of the festival, state-of-the-art technology is to be displayed and topical artistic approaches and current methods are to be discussed against a backdrop of philosophical and aesthetic discourse.

The desire for music in the room, as composer Karlheinz Stockhausen expressed it in the 1950s, is not an exotic desideratum nowadays, as surround sound has become en vogue after decades of nicheness. Stimulated by the visionary force of the musical avant-garde, it has been possible to develop and establish systems to produce and playback surround sound during the past few years. Today, institutions such as Paris' IRCAM and the ZKM | Karlsruhe offer these systems immersive research and presentation platforms with the Paris Espace de projection and the ZKM_Klangdom.

Immersive projection technology is penetrating the consumer area and mass market: In the visual field, 3D cinema and full dome films have experienced a renaissance since the mid-2000s, while event halls, picture palaces, theatre stages and discotheques started to invest in immersive sound systems shortly thereafter. Immersive applications in the fields of Virtual Reality (VR) and Augmented Reality (AR) make use of the portability and compactness of smart devices, as smart devices today create things which could, at best, only have been produced with the use of mainframe computers a few years ago.

On the internet too, users are being excited by new and immersive VR and AR applications – for example through Facebook's newly launched 360° video livestreams or by a new ambisonics sound feature for the video streaming service YouTube.

inSonic2017 is organised within the framework of the Interfaces project. Interfaces is an international, interdisciplinary project focusing on bringing new music to an extensive range of new audiences. With the support of the Creative Europe Programme, Interfaces unites nine diverse partners from 8 European countries with the main objective to engage new audiences of all ages and those potential audience segments which, for a variety of demographic or cultural reasons have not yet been exposed to the music of our time.

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20:00 ZKM_Media Theater
Konzert I with works by The Human Factory, Wolff & Sharma

Against Immersion: Towards a Discursive Situation in Media Art

Budhaditya Chattopadhyay

Budhaditya Chattopadhyay is an India-born media artist, researcher, and writer, with a PhD in sound studies from Leiden University.

Immersion is a much-loved word in the domain of media art. It is through immersion that the audience often engages with media artworks, especially those involving multi-channel sound, video, and spatial practices. In these works, immersion operates as a context for realizing the production of presence as an illusion of non-mediation (Reiter, Grimshaw et al.). The main concern here, however, is whether the audience tends to become a passive and non-acting guest within the immersive space that is often constructed by an authoritarian and technocratic consumerist-corporate culture. In this mode of non-activity the audience may lose the motivation to question the content and context of the work by falling into a sensual and indulgent mode of experience, thereby allowing the consumerist-corporate powers to take over the free will of the audience (Lukas et al.). From my position as a media artist, in this paper I will argue for producing a more discursive environment rather than an immersive one. My focus is on the sound-based media artworks. I will examine the possibility of creating sound-based artworks where the individuality of the audience is carefully considered and taken into account as a parameter for a fruitful dissemination of the artwork. I will discuss a number of recent artworks to develop and substantiate my argument.

Sound as a Space Generator, Toward Temporary Architectures

Giulia Vismara

Giulia Vismara's experimental research focuses on electroacoustic composition, sound installations, and performances. She is interested in the act of listening and sound spatialization. Her PhD research at IUAV, Venice, is focused on interaction between sound, space, and body.

Today the increasingly sophisticated techniques of sound spatialization are one of the most important creative tools available to composers, artists, and sound designers. The multiple possibilities of sound diffusion – the use of 3D, 4D, binaural techniques – and the creation of immersive sound installations can alter our perception of space. Sensory immersion is crucial to our interaction with the environment and sound events play an effective supporting role in space embodiment. In this scenario space dimensions become elastic, mobile, and without boundaries; as an aggregate of temporary sounds connected by causal relations in place of permanent objects.

Sound, as a physical phenomenon which expands in a multidirectional way, is able to activate the space thus stimulating body immersion within that space. Therefore, acoustic stimuli interact with the body to transform preexistent architecture and create new temporary architecture.

With the purpose of redefining a poetics of sonic spaces, this presentation discusses different case studies highlighting some relational potentialities between sound, space, and body.

Verbalizing Sculptural Sound Phenomena in Electronic Music: Towards a Shared Perceptual Space (SPS)

Gerriet K. Sharma

Composer and sound artist. Spatialization of electroacoustic compositions in Ambisonics and wave field synthesis. Senior researcher on the Orchestrating Space by Icosahedral Loudspeaker (OSIL) project funded by the Austrian Science Fund, and DAAD Edgar Varèse professor at the TU Berlin in winter semester 2017.

This contribution is concerned with questions about whether the aesthetics of today's spatialized electronic music take into account the perception of the audience at all and how to find terms that could be helpful for composition and analysis of spatialized sound. We are dealing for some time now with spatial sound phenomena that have spatial dimensions such as proliferation, width, height, and so on, which form diverse sound masses that can penetrate, layer, move around each other, and define by their properties space itself. Thus, these phenomena are perceived by composers, scientists, and audiences as causing "something" which we call a shared perceptual space (SPS). Approaches and methodologies are introduced on how to develop and derive a specific terminology on "sculpturality" for a certain way of spatial sound projection. By this we intend to encourage the aesthetic discussion about space in spatial sound composition and thereby enlarge the compositional contingencies of this art.

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Symposium

Space Mapping through Sonic Islands of Intimacy

Silvia Rosani

Silvia Rosani has recently completed a PhD at Goldsmiths, University of London, where she works as an associate lecturer. Her music is performed internationally at festivals such as MATA (NY), Salzburg, and the Venice Biennale.

The present paper addresses how in »White Masks«, an interdisciplinary project for cello, live electronics, and resonating objects, the coupling of visual and sonic modules that synthesise speech-like sonic material have enabled the creation of an array of listening experiences for the audience. Space has been addressed at different levels. First, a virtual space has been conceived in the way that sound has been spatialized and delayed. Second, the cellist as well as the electronically generated sound are active in the space in different locations. Third, islands in which stools are allocated for the audience are associated to groups of metal panels to which transducers are attached. The panels' size are conceived to match the wave length of some of the formants of vowels, so that additive synthesis can be used to recompose textual elements. Hence the project aims to disrupt the performer–audience hierarchy and to suggest transitions between virtual spaces and the audience space.

3D Audio: Sculpting with Sound. Exploring Specific Production Aesthetics for a New Medium

Sabine Breitsameter

Sabine Breitsameter is an experimental author, director, dramaturge in the German ARD network, artistic director of numerous experimental festivals, and professor of sound and media culture at Darmstadt UAS since 2006. Focus: electroacoustic art forms, auditory culture, media history and technology, media and acoustic ecology.

Our ongoing arts-based research project has been exploring plausible as well as innovative production aesthetics in 3D: beyond its accomplished technological application, 3D audio calls for distinctive artistic concepts and criteria in order to ascertain its necessity beyond providing just hyped-up versions of already familiar artistic phenomena.
Based on 2000 years of rich cultural history in 3D sound creation, we shall suggest major categories and main criteria that reflect its specifics, and discuss 3D audio on the basis of the listening gestalt of soundscape. Convenient terms like immersion, tangibility, and virtuality are questioned and investigated in reference to overused concepts, naive realism, and the lack of providing positions of critical distance. We shall suggest and point out that a huge artistic potential for specific 3D audio productions lies in approaches like fragmentization and deconstruction, despite 3D audio's all too often heard claim of providing the ultimate illusion.

Inversive Future. The Myth of Immersive Technology and the Unwilling Suspension of Disbelief

Martin Rumori

Martin Rumori is an intermedia artist and a researcher focused on installations and sound. He is interested in anecdotal everyday life residues, and in aesthetic experience as shaped by spatial media.

As early as 1817, Samuel T. Coleridge described a mental state similar to what we nowadays call immersion. According to him, willing suspension of disbelief implies a deliberate consent of the recipients. Today, our will to be immersed is delegated to "research and presentation platforms," "projection technologies," and "spatial sound systems" that are called "immersive" themselves. Perceptual cues, when synthesized perfectly, are believed to induce immersion unconditionally and inevitably. However, nothing appears to be less immersive than yesterday's once celebrated achievements. I understand the belief in "immersive media" as an example of croyance, a form of superstition, as coined by Octave Mannoni. Croyance serves for maintaining a mimetic difference in performing convergence to nature by techné, that is, engineering. I argue that immersion may be liberated as an instrument for cultural enjoyment if it is understood as a "magical practice," which rehabilitates willingness.

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Paradigm Shift: Contemporary Spaces for Sound and Electronic Music Culture

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Marie Kristin Meier, Brendan Power & Nick Meehan

Nick Meehan is an American artist, technologist, sound designer, founding Chairman and Artistic Director of the Institute for Sound & Music e.V. (ISM) in Berlin. Marie-Kristin Meier is Vice Chair of the ISM and program coordinator / curator of Berliner Festspiele's program »Immersion«. Brendan Power is Deputy Chair and co-founder of the ISM.

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Immersive art and electronic music have emerged as interrelated forms in the public awareness, while ways in which they are presented together are rapidly evolving. Increasing numbers of artistic works, exhibitions and installations can be found on display in traditional art spaces. This is made possible, in part, by growing support and acceptance from a wide range of galleries, museums and institutions, while technological developments in this area combined with creative thinking are leading to new initiatives. This suggests a widespread interest in the field and increased adoption by formerly silent and motionless physical spaces to foster new experiences of sound, immersive art, and electronic music. Encouraging this paradigm shift stands as one of several causes the Institute for Sound & Music e.V. has dedicated itself.
The ISM Hexadome is an example, presented as an immersive 360° audiovisual installation combining art and technology. It is the first step in the Institute for Sound & Music's initiative to redefine the museum experience. The ZKM_Sound Dome, an advanced multi-channel speaker configuration created by ZKM | Institute for Music and Acoustics is hosted within with a visual projection architecture designed by digital media studio, Pfadfinderei. The Hexadome will premiere at the Martin Gropius Bau in Berlin, March 2018, where 10 audio-visual works from international artists will be commissioned and presented, before travelling throughout Europe and North America.

Symposium

Interfaces – New Models and Practices for Audience Development in Contemporary Music in Europe

Christos Carras

Christos Carras studied philosophy at Cambridge University and received his PhD from the Sorbonne in 1989 on Aesthetic theory and musical composition after 1945. He is the Executive Director and Head of the Music Program of the Onassis Cultural Centre (OCC) and Project Manager of the European large scale cooperation project "INTER-FACES" funded by the Creative Europe Programme.

Interfaces is an international, interdisciplinary project focusing on bringing new music to an extensive range of new audiences. It involves a partnership of organisations from a wide range of European countries having a broad spectrum of experience in fields such as performing, multi-media exhibitions, new media, acoustic and electroacoustic research and education. This trans-sectoral approach is the key to opening up new perspectives on both the creative dimension of the project and the central objective, which is to engage new audiences of all ages and those potential audience segments which, for a variety of demographic or cultural reasons have not yet been exposed to the music of our time.

Immersive Environments and Augmented Reality in Media Art. A Personal Review and a Preview

Bernd Lintermann

For twenty years Bernd Lintermann has worked as an artist and scientist in the field of real-time computer graphics with a strong focus on interactive and generative systems. The results of his research are applied in scientific, creative, and commercial contexts.

The ZKM | Institute for Visual Media has a history of more than twenty years' production in the field of art and media with a strong focus on the development of immersive formats. Its many and varied productions are and have been created for a variety of contexts, such as VR installations for museums, stage performances and operas, dome projections for entertainment parks, and stereoscopic projections for music concerts.

To meet the needs of professional production and to push the limits of the creative process, the institute developed its own technologies implementing original concepts, which have served as the basis for several major artworks of internationally renowned artists like Bill Viola and the Wooster Group. Recent research activities extend from interactive panoramic environments, VR with head mounted displays, to augmented reality (AR) with mobile devices.

The talk will present selected examples of productions addressing a public audience in a cultural context and providing insight into immersive strategies from past to present.

Cartesian Dualism in Contemporary Cosmology: A Thought Experiment in Virtual Reality

Daniela de Paulis

Daniela de Paulis is an interdisciplinary artist based in The Netherlands. She has published her work in the MIT journal Leonardo, Inderscience Publishers, Acta Astronautica, and Cambridge University Press amongst others.

»COGITO« is a thought experiment which is in the process of being developed as a hybrid experiential narrative. Inspired by science fiction literature, principles of psychoanalysis, the overview effect, and current philosophical debates on the topic of consciousness, »COGITO« takes place inside the cabin of the Dwingeloo radio telescope in The Netherlands. For »COGITO«, one visitor at a time enters the cabin of the radio telescope and sends her or his brain activity into the cosmos while viewing an immersive video of the Earth seen from space. The work has been developed as a reflection on Cartesian dualism and as a reflection upon the type of knowledge we gain from the discovery of remote cosmic phenomena that cannot be known through direct sensory experience. Radio waves transmissions have been expanding humans' reach into the universe, thus becoming the mean for virtual human space travel and the carriers of a new found cosmic awareness and cultural contents, exceeding their scientific and technological function. As cosmology progresses in its discovery of the universe, it becomes important to bring back the role of the mind in the interpretation of the world picture. The way our mind works is central to understanding the universe, the mirroring effect between mind and matter should be explored in order to better identify our very unique – and possibly arbitrary – notion of the universe and our life within it.

The Immersion in the Post-virtual Reality: Notes about a New Kind of Feeling

Eli Borges, Jr.

Eli Borges, Jr., is a PhD student at the University of São Paulo (USP), a senior researcher at the International Center for Studies on Digital Networks – Atopos USP, and a research fellow at São Paulo Research Foundation (FAPESP).

This presentation aims to discuss new possibilities of thinking the concept of "immersion" and, consequently, the contemporary forms of image fruition. Technological resources, such as 360° video and photo, and recent devices of virtual reality and augmented reality seem to have begun a relation between image and spectator that is qualitatively diverse. We start, then, from the hypothesis of a rupture of the frontality that has always marked a subject that perceives and an object that is perceived. This rupture seems to be related to a new form of feeling, not just visual and auditive, but rather synesthetic. It is in this sense that we present the notion of "post-virtual reality,", which seeks mainly to account for the immersive possibilities offered by these new technologies. Post-virtual reality, already presented on other occasions, is a notion under development and therefore remains open to the contributions that our studies on these technologies have offered in the course of our investigation.

Symposium

Artificial Intelligence for Art and Music

Robert B. Lisek

Robert B. Lisek, PhD, is an artist, mathematician, and composer who focuses on systems and processes (computational, biological, social). Lisek is a pioneer of art based on machine learning and artificial intelligence.

We observe the success of artificial neural networks in simulating human performance on a number of tasks such as image recognition, natural language processing, and so on. However, there are limits to state-of-the-art artificial intelligence (AI) that separate it from human-like intelligence. Humans can learn a new skill without forgetting what they have already learned and they can improve their activity. Today's AI algorithms are limited in how much previous knowledge they are able to keep through each new training phase and how much they can reuse. In practice, this means that you need to build a new algorithm for each new specific task. Artificial general intelligence describes research that aims to create machines capable of general intelligent action. "General" means that one AI program realizes a number of different tasks and the same code can be used in many applications. We must focus on self-improvement techniques, for example, reinforcement learning, and integrate it with deep learning, recurrent networks.

Fiction-Reality Continuum

Matthias Wölfel

Dr. Matthias Wölfel is a Professor for Interactive Media at Furtwangen University, Germany. His research interests include HCI, AI, AR & VR as well as digital culture.

How much of the physical surrounding is hidden by technical means is described by the reality-virtuality continuum. Its scale ranges from the physical reality, to augmented reality until virtual reality, but does not include the inner state of mind. Because the deep mental involvement in something, often referred to immersion, is fostered by outer as well as inner stimuli, the model has to be extended to include mental reality. Besides the stimuli, immersion is mainly supported by the narration. Three types of fictions can be separated in storytelling: non-realistic, realistic and non-fiction. By introducing the fiction-reality continuum it now becomes possible to classify all sorts of media ranging for instance from myths (realistic fiction|mental reality), cave paintings (non-fiction|virtual reality), virtual dressrooms (realistic fiction|augmented reality) until board games (non-realistic fiction|physical reality). With the proposed framework various questions, like mapping between different classes or modalities, can be addressed.

Future Perfect and EcoRift

Garth Paine

Garth Paine has a long history of composing musical works from his field recordings and engaging in environmental work through sound. He works predominately in spatial audio, and VR. His compositions having been performed across the globe.

Future Perfect and EcoRift are VR works by Garth Paine. In this talk Paine will discuss the experience of Place within VR and his development of ambisonic tools for Unity 3D. He will outline his upcoming collaboration with IRCAM/ZKM on Future Perfect, a concert performance using smart phone virtual reality technologies.
Future Perfect explores the seam between virtual reality as a documentation format for environmental research and archiving nature, with the idea that ‚nature' as we know it may, in the near future, only exist in virtual reality archives, and the notion of the virtual, a hyper-real imaginative world contained by a technological mediation presenting that world to the individual as a private experience. The performance will not have a fixed Point of View. interactive crowd mapping using smart phone beacons will generate personal journeys through the work and determine each audience members own viewing and listening perspectives.

Composing Sound Sculptures with the Ambisonics instrument IKO

Gerriet K. Sharma, Matthias Frank & Franz Zotter

Gerriet K. Sharma is a composer and sound artist currently working as a DAAD Edgar Varèse professor at the TU Berlin.
Matthias Frank and Franz Zotter are researchers at the Institute of Electronic Music and Acoustics, University of Music and Performing Arts Graz.

In computer music, sculptural sound objects have increasingly addressed various sound projection techniques over the last sixty years. The icosahedral loudspeaker (IKO) of IEM and Sonible is the first compact beam-forming sound emitter based on third order Ambisonics. By virtue of its three-dimensional beam forming, the IKO has turned out to be a portable musical instrument that allows one to compose and perform sound sculptures in space. However, the aesthetic result differs considerably from those obtained by a surrounding multichannel loudspeaker setup. This contribution presents our theory about sculptural sound composition and musical works composed for the IKO during the writing of G.K. Sharma's PhD in order to investigate usage and verbalization of sound sculptures in electroacoustic music composition. This workshop expands the first introductory workshop that was held at Insonic 2015 with many new aspects, which the research efforts , performance, and composition with the IKO have led to in the past two years.

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Precious Spatiality by Omni-speakers

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Johann Ablinger

Johann Ablinger, PhD, born 1953 in Austria. A musician (piano) and
manufacturer since his childhood, he built his first PA speakers when
he was 18. He studied music and then psychology in which he obtai-
ned his PhD. He is a sound engineer, researcher, and inventor.

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When playing stereo recordings via loudspeakers, basically only one
person can enjoy good quality sound. The main reason is that with
the usual directive loudspeakers there is only one perfect listening
place. One of the few exceptions is the wave field synthesis. This,
however, requires vast technology.
I shall present a loudspeaker technology – for eyes and ears, intel-
lectuality and sensitivity – where even two stereo speakers produce
a great and precious acoustic spatiality. And you will experience
wonderful, natural and relaxing, audiophile enjoyment.
I shall talk about omnidirectional loudspeakers; in particular about
speakers that work with diffusers and radiate the sound all around –
360° – as a point sound source.
This technique has been known since around 1920. However, some
basic elements have been misunderstood or neglected until now
– even by major companies. And this is the main reason why direc-
tive speakers have been used for the last 100 years, in spite of their
drawbacks.
I will introduce you – live – to these basic elements for a sophistica-
ted setup with omnis. I am sure that these are the speakers of the
coming decades.

Joint Electroacoustic Performances on Sound Field Synthesis Systems: A Progress Report from the Electronic Orchestra at the TU Berlin

Henrik von Coler

Henrik von Coler is currently managing the Electronic Music Studio at TU-Berlin. He teaches and researches in the field of sound analysis/synthesis and is active in the composition and performance of electroacoustic music.

The Electronic Orchestra at the Technical University Berlin was founded in 2017 as a platform for exploring technical and aesthetic concepts in the context of joint electroacoustic music performances on sound field synthesis systems. The instruments, such as modular synthesizers, physical modeling synthesizers, individual interfaces, analog effects on breadboards or samplers for processed recordings, are self-built or conceptualized to a great extent. A circular speaker setup is used either as an Ambisonics reproduction or panning-based diffusion system for live spatialization. Improvisation, conceptual, and graphical scores delivered the repertoire. Within the first year, several useful experiences were made, with regard to both the technical and the conceptual elements. This article briefly introduces all relevant components, such as the repertoire, the technological framework, and the sound sources provided by the participants. Findings on the resulting spatialization and future directions are presented at the end.

Symposium

We Decorrelate

Joachim Goßmann

Joachim Goßmann connects engineering, philosophy and creative practice in audiocentric media environments. He has a Tonmeister degree from UdK Berlin, an MFA in Composition/New Media from CalArts and a PhD in Computer Music from UC San Diego. His professional involvements include Fraunhofer IMK in Bonn, ZKM Karlsruhe, the Qualcomm Institute in San Diego and most recently DTS, Inc.

Human hearing involves two spatially displaced ears. The spatial perception of sound is connected to subtle differences between the signals received at each of these two auditory channels, yet the resulting perception is of a single sound source. The frequency-dependent differences of amplitude and phase can be perceived as properties of location, but they also encode an entire gamut of qualitative aspects of heard sound. Often we in fact receive more than two copies: sound in interior spaces arrives at each of our ears multiple times; first as a direct sound, and then as a series of transformed repetitions resulting from the reflective properties of the acoustic environment. If these reflections are sufficiently similar to the original they will appear as a single reverberant spatial sound event. If the signal transformations of displaced copies permit no such simplification of the auditory scene, they will become perceivable as independent transformed copies of the original, perhaps even become disconnected, independent events. What are the thresholds between monophony and polyphony? How does sound break apart and split in two? What are transformational pathways from a single monophonic source to perceptual immersion in a vast polyphony of seemingly independent auditory elements?

The ZKM_Sound Dome

Ludger Brümmer

Ludger Brümmer is a composer, professor of composition at the Staatliche Hochschule für Musik Trossingen, and, since 2003, head of the Institute for Music and Acoustics at the ZKM | Karlsruhe, where he initiated the Sound Dome Project.

The ZKM_Sound Dome is the unique heart of the ZKM | Institute for Music and Acoustics. The dome-shaped set up comprising forty-seven loud speakers and four subwoofers is an ideal location for the development and reproduction of spatial electro-acoustic or acousmatic music. New compositions can be produced and then performed here. In addition to the works produced at the ZKM, the ZKM_Sound Dome also serves as a special venue for international guest performances and festivals, and as a special concert space. The Sound Dome is controlled by the free software Zirkonium, which the ZKM | IMA has been developing since 2004. In addition to a recording space, the studio also serves as a public concert hall and laboratory for research in the field of musical acoustics. Initiated by the state of Baden-Württemberg, the so-called Sound Dome was designed and realized for the ZKM_Cube as part of the »Zukunftsoffensive« [future offensive] research project. The studio space has since been equipped with forty-seven high-quality loudspeakers, which are located around the listeners in a dome-shaped arrangement. The studio and the attached directors' space in the ZKM_Cube are the main work locations at the ZKM | IMA.

The Spatial Approach to Sound in »Pneumatic Sound Field«

Edwin van der Heide

Edwin van der Heide is an artist, composer, and researcher in the field of sound, space, and interaction. He extends the terms composition and musical language in spatial, interactive, and interdisciplinary directions.

In this lecture Edwin van der Heide describes the general context around his work as composer and sound artist. From this basis he will explain the development of the installation »Pneumatic Sound Field« and discuss the approaches he used for the spatial perception of sound in the installation. In addition, he will address the compositional approach that is based on the created continuum between the rhythmical perception of sound, spatial perception of sound, and the perception of pitch.

Mapping Acoustic Spaces: Olga Neuwirth's »Disenchanted Island«

Markus Noisternig

Markus Noisternig is a researcher at IRCAM, CNRS, Sorbonne University–UPMC in Paris and a Senior Lecturer at the Institute of Electronic Music in Graz. As an artist he is widely known for his works at the intersection of artistic creativity and scientific discovery, and he has participated in numerous collaborative projects with well-known composers and ensembles of New Music, which have performed in key European and international festivals.

»Disenchanted Island« by Olga Neuwirth takes the audience to Venice, its lagoon, and the church of San Lorenzo. Inspired by the novel »The Encantadas« by Herman Melville and Luigi Nono's major work »Prometeo«, this audio/video installation provides the audience with an outstanding and compelling exploration of space and sound. Tal Rosner's digital assemblages, some simple and some complex, illustrate the soundscape with an additional perspective. Using photographic and imaginary fragments of San Lorenzo's architecture and its surroundings as his base, he processes the forms in a way that allows new viewpoints, rooted in the principles of parametric design.

Music and Reality.
Aesthetic Reflections on Immersion

Elena Ungeheuer

Elena Ungeheuer is a professor for contemporary music at the University of Würzburg. Her approach of pragmatic music research provides multi-layered perspectives on complex issues of art in the now.

You want people to get immersed in your art? How do you stand on reality?

It seems to be both trivial and strange: today's discourses on immersive technologies are largely related to the technologies' potential for credibly simulating reality. Historians might feel encouraged to update the long history of mimesis in art. By contrast, there is a different, long history of cultural efforts to establish art as an alternative to reality while opening up a broad horizon of non-realistic forms of logic, coherence, and constellations. This paper reflects on current concepts of reality as an indispensable methodological precondition to identify aesthetic categories and strategies of immersion-oriented art forms. This argument rests on the assumption that conceiving, altering, and evaluating space forms an elementary anthropological feature that may even give life to mere technical installations. Composing space is investigated as crucial to differentiating between realistic versus imaginative aesthetic options.

3D Audio Workshop: Conceptualization and Implementation

Sabine Breitsameter (director), Natascha Rehberg, and Aleksandar Vejnovic, Soundscape and Environmental Media Lab (Darmstadt UAS)

Sabine Breitsameter, professor of sound and media culture, Darmstadt University of Applied Sciences (director), Natascha Rehberg, and Aleksandar Vejnovic are artists and collaborators at the Soundscape and Environmental Media Lab, who have directed 3D audio research since 2012.

Each 3D audio composition creates a sonic topography. Like an architect or a choreographer, the 3D audio composer creates figures, structures, and auditory gestalts through the spatial positioning and movements of sounds. With the objective of expanding the artistic means of expression by the use of 3D audio technologies, this workshop provides an introduction to specific fundamental concepts, central creative parameters, and explores and discusses practical aspects of composing within object-based production environments. Workshop participants can develop their own approaches and get hands-on experience with the SpatialSound Wave System (SSW) of the Fraunhofer IDMT, Ilmenau.
The workshop relates to selected aspects of an ongoing research project at the Soundscape and Environmental Media Lab (UAS Darmstadt, Germany).

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Hyper-listening: Praxis

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Budhaditya Chattopadhyay

Budhaditya Chattopadhyay is an India-born media artist, researcher, and writer, with a PhD in sound studies from Leiden University.

29

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Hyper-listening: Praxis is a series of workshops that operates as a set of exercises and collaborative experiments involving the methodology of "hyper-listening." Hyper-listening seeks to explore the mindful aspect of listening and engaged learning about the surrounding environment by producing subjectivity. The participants are requested to locate certain sites that trigger a multitude of associative thoughts, imaginings and/or personal memories within an immersive environment. The participants are guided to utilize these auditory associations embedded in the immersive experience to help them engage independently, inclusively, and contemplatively with the environment. The outcomes are presented in a collective setting at the end of the workshop. I have been involved in conducting this on-going series of workshops in various arts, humanities, and cultural institutions across Europe and Asia to mobilize and spread an awareness of inclusion and contemplative acceptance of the sonic other.

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Interface   Audiovisual dance performance

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The Human Factory

The Human Factory, founded by the violinist Harald Kimmig, develops
and performs interdisciplinary formats. It explores the mechanisms of
the various genres, arts and medias and their influence on the human
perception.

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»Interface« examines the relationship between the corporeal and the
technological by using the extension and multiplication of sound and
body as a means of creating intersubjective and dialogic human–me-
dia processes. This is achieved by the interaction of improvised and
contemporary violin music, the movement language of contemporary
dance, electronically generated sounds, time video sequences, and
lighting. A dancer and a violinist act within a digital setting arranged
around the audience and existing of a video projection on several
screens and a multichannel installation. Both artists generate visible
and audible signals by their movements and sounds and thus become
ultimate portable instruments. Due to intermediary random opera-
tions and generators they cannot control their digital generated data
completely: Rather a digital momentum is created influencing both
actors' movements on stage.

Credits:
Harald Kimmig (violin, director)
Hideto Heshiki (dance)
Ephraim Wegner (audio live processing)
Simon Schwab (video live processing)
Georg Hallmann (lighting)

1500

Paul Wolff

Paul Wolff (b. 1990): Work with concrete and synthetic generated sounds. Fixed media pieces for stereo, 8-channel and ambisonic systems, compositions for live electronics as well as installations with focus on interaction and/or AV.

A variety of drum sounds together with a snippet of a voice recording constitute the raw material of the piece. The envelopes used differ significantly from each other in terms of shape and duration. Through their features specific qualities of the material are emphasized and revealed. As a consequence of further transformations the sounds are disconnected from their yet recognizable original state. The result is short percussive clicking events and slowly evolving scapes trans-forming into short compact unities. The fusion and layering of the sounds create a more solid structure which transitions from loose-ning to densening. With the use of the IKO the density of the piece is expanded into the room and the musical movements draw a likeness of an additional (spatial) layer.

gleAM

for icosahedron loudspeaker

Gerriet K. Sharma

Composer and sound artist. Spatialization of electroacoustic composi-
tions in Ambisonics and wave field synthesis. Senior researcher on the
Orchestrating Space by Icosahedral Loudspeaker (OSIL) project funded
by the Austrian Science Fund, and DAAD Edgar Varèse professor at
the TU Berlin in winter semester 2017.

In December 2015 Gerriet K. Sharma was invited by the Helmholtz
Centre in Berlin to meet members of the Institute of Accelerator Phy-
sics. BESSY II VSR is a project by the Helmholtz Centre which aims to
generate electron pulses of variable lengths within the electron sto-
rage ring BESSY II. Thus, in the future it will be possible to research
and investigate new experimental issues within the field of energy
materials in ways not imaginable before. The artistic motivation for
the collaboration was to develop an ephemeral sculptural space
sound composition by using an advanced sound projection technique
also being developed by using acoustical beam forming. The aim was
to search for the intersection of the two arts and sciences disciplines
in the Now. Both essentially influence the way how world is descri-
bed, experienced, and understood today.

Aquatocene: The Subaquatic Quest for Serenity   for live electronics (4 channels) & video

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Robertina Šebjanič

Robertina Šebjanič (SI) is an artist working in the transdisciplinary field – art, technology, and science – of exploring (under)water habitats. Her work has been exhibited internationally. She was awarded an Honorary Mention @Prix Ars Electronica 2016, nomination for STARTS2016.

»Aquatocene: The Subaquatic Quest for Serenity« investigates the phenomenon of underwater noise pollution created by humankind in the world's seas and oceans.
The audio compositions of the subaquatic soundscape encourage us to reflect upon the anthropogenic sonic impact on underwater habitats and marine life, and also illuminate awareness and underscore the importance of maintaining safe sound environments for animals living in the world's oceans, seas, lakes, and rivers.
The sound compositions are a remix of the bioacoustics of marine life (shrimps, fish, sea urchins, etc.), the aquatic acoustics, and the presence of human-generated noise in the world's oceans and seas. Underwater noise affects a vast number of marine life forms which depend on the subaquatic sonic environment to survive.

Körper

Fixed Media

Antonio d'Amato

Antonio d'Amato graduated in piano, harpsichord, music for multimedia, music pedagogy, electronic music, and audio engineering. He also studied composition, bassoon, organ, and the ondes Martenot.

»Körper« [bodies] is an acousmatic piece entirely based on the elaboration of an acoustic pulse sequence, which was produced in the course of a MRI diagnostic test. The aesthetic idea implied in the composition refers to the topical and controversial theme of global control and censorship.

If nowadays cameras and sensors constantly watch the movements of individuals in cities and buildings, can we assume that in the future cells and chemical reactions in our bodies will be scanned and examined in order to gather information that is collected, stored, and processed?

Spectral editing and resonant filters are chained in order to isolate restricted areas in the whole sound object. The foundation material is revealed only at the very end of the piece. The piece was composed at ZKM studios in Karlsruhe.

Definiere Lastbedingung

Clemens von Reusner

Clemens von Reusner (b. 1957 in Germany) is a composer and sound artist, who focuses on acousmatic music. There have been numerous performances of his compositions in the Americas, Asia, and Europe.

»Definierte Lastbedingung« [defined load condition] is based on the sound of electromagnetic fields as they arise when using electric devices. Numerous recordings of electromagnetic fields were made at the Institute for Electrical Machines, Traction and Drives (IMAB), Technical University of Braunschweig, with a special microphone. The recorded material has little of what a ‚musical' sound is intrinsically. There is no depth and no momentum. In their noisiness these sounds are static, though moved inside. They usually seem bulky, harsh, and repellent, even hermetic like the well-known electrical hum. Defined load condition (a technical term when testing electrical machines) works with these sounds, which are studied in their structure, reformed, and musically dramatized by means of the electronic studio.
Spatialization: Ambisonics 3rd Order.
»Definierte Lastbedingung« was the German contribution to the ISCM World New Music Days 2017, Vancouver, Canada.

R2

Marco Kempf

Marco Kempf studies Media Art at the Karlsruhe University of Arts and Design. He is mainly focussing in sonic or sound arts, audiovisual installations and performance. He explores the possibilities of multichannel systems and Wave Field Synthesis as medium for spatialization and the usage as a new kind of instrument and on the other hand is he experimenting with „low tech" and self-made electronic instruments.

»R2« tries to find narrative structures within the relation of time and space and how they can work together.

AGNETE AND THE MERMAN

CRISTIAN VOGEL & THE AUTOMATIC MESSAGE

Garth Paine has a long history of composing musical works from his field recordings and engaging in environmental work through sound. He works predominately in spatial audio, and VR. His compositions having been performed across the globe.

»Agnete and The Merman« is a film adaptation and documentation of a sonic theatre performance created by the composer Cristian Vogel. The original staging happened at Godsbanen Theatre Aarhus in June 2017. The scenes for the film were shot on the set and edited by Canadian AV artists Tanya Goehring and Trevor Jacobson aka The Automatic Message.

»The Ballad of Agnete and The Merman« is based on a supernatural Scandinavian folk ballad. It was originally commissioned by the Aarhus European Capital of Culture under its „ReThink" theme. Software controlled sound, light and live choreographic performance reframed scenes from the old ballad, as a modern, immersive and immediate music experience. The staged version ran for four nights and was well received by all who attended.

The parallel film project represents an experiment into performative documentation, aiming to mediate the experience of the immersive staging for a wider audience. The music score of the film is an adaptation of Cristian Vogel's original wave field synthesis score, but has been recomposed entirely in high order ambisonics.

Credits:
Music, Sound Design and Choreography by Cristian Vogel
Filmed and Edited by The Automatic Message
Produced by NeverEngine Labs Plus
Cast: Siegmar Aigner / My Nilsson
Make Up and Fashion Design: Valeriya Olkhova (VOFT)
Additional scenography: CITA
Filmed on location at Godsbanen, Aarhus, Denmark.
Supported by Danish Arts Council / Aarhus2017 Foundation / Godsbanen Aarhus

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Spatial Grains: Soundscape No. 1. Fixed Media

Javier Alejandro Garavaglia

Composer, performer (viola), and scholar. Main interests (research and practice): composition (instrumental, electroacoustic), sound diffusion in HDLA settings, full automation of live electronics, dramaturgy of music.

Acousmatic music for diffusion in a high-density loudspeaker array (HDLA) and Ambisonics. Original version for 143 speakers and 4 LFEs.
Imaginary soundscape composed and presented live in concert during the Spatial Audio Workshop residency, August 2015 at Virginia Tech's (USA) Moss Arts Center, CUBE Hall with 147 speakers (143 + 4 LFEs).
The main goal during the residency was to test in a proper environment my new system for sound diffusion in high-density loudspeaker arrays (HDLA): Granular Spatialisation (GS), which translates the principles of granular synthesis into sound diffusion.
The piece is based on field recordings of birds, insects, water, rain, San Marco's bells in Venice, city sounds close to the Manhattan bridge in NYC, amongst others (i.e., concrete sounds). The CUBE's five levels (ground floor plus three upper floors and the roof's grid) allowed the granulated diffused sound to freely wander over the entire space creating multiple space settings combined with dynamically programmed ambisonics. For its performance at ZKM during InSonic2017, a special version for the ZKM_Cube's HDLA (47 speakers) using GS and ICST's ambisonics was produced.

The History of Levitation   Fixed Media

Fredrik Mathias Josefson

Fredrik Mathias Josefson has been active for years in the international experimental and electroacoustic music scenes with many album releases, sound-installations, and over one hundred concerts.

»The History of Levitation« is a fixed multi-channel composition, which is part of an ongoing research project where spatialization is a key component of the composition with the ambition to fully immerse the listeners. Algorithms as a compositional strategy, with the focus on flocking simulation in particular, is used not only to position sound objects in the spatial domain, but also to make decisions in the frequency and time domains.

Berloga

Fixed Media & Live-Video

Dmitri Mazurov

Dmitri Mazurov is a composer working in the field of contemporary academic music and experimental electronica. He studied music theory at Novosibirsk musical college, Siberia, Russia.

Working on the piece »Berloga« I tried to combine elements of sound art installation and underground techno music discovering my interest in both academic and club cultures. The piece is based on the material from a live performance given at the Geometry of Now festival curated by Mark Fell at GES-2, Moscow, in February 2017. The piece explores the boundaries between so-called academic electronic music and underground electronica. What should be called academic nowadays, especially in the field of electronic music? What place is on the cutting edge of contemporary music: philharmonic, sound laboratory, or even rave club?
In Russian berloga means a bear's lair; the title reveals my Siberian experience of living in a cold, remote place.

Credits:
Spatialization by Peter Malafeev
Live Generative Graphics by Ildar Iakubov

Moments of Liberty: Outside and Insight

Fixed Media

Dimitrios Savva

Dimitrios Savva (b. 1987) received his Bachelor degree (distinction) in music composition from the Ionian University of Corfu and his Master degree (distinction) in electroacoustic composition from the University of Manchester. In January 2015 he started work on his PhD at Sheffield University under the supervision of Adrian Moore and Adam Stanovic.

"… from there to here…"

Undercurrents

Fixed Media

Savannah Agger

Savannah Agger (*1971) is a composer and performer from Sweden, living in Berlin.

A flow of layered sound streams. Hidden tendencies that move below the surface of what we easily perceive.

A flow of layered sound streams. Hidden tendencies that move below the surface of what we easily perceive.

This version of the piece is using spatialisation tools developed in the OpenMusic software during my artistic research residency at IRCAM in 2017. The compositional idea derives from sculpting sound objects as 3D models in space. This approach is used to control sound synthesis and spatialization, and to connect the spectral and diffusion spaces.
A special „thank you" to Jean Bresson and Thibaut Carpentier at IRCAM for their work, support and patience and to Das Elektronische Studio der TU in Berlin and to Elektronmusikstudion (EMS) in Stockholm for the support.

rive: Splitting Sound and Light

Audiovisual performance

James Dooley

James Dooley (Birmingham, UK) is an audiovisual interaction designer. His work combines audio, visual and environmental elements to explore emergent forms hidden within the performance space.

Exploring the synergy of sound and light, »rive« is a multi-channel, immersive audio light performance. Sound and light can both be described as travelling in waves; different pitches and colors can be obtained by changing their frequency, with white noise and white light containing all pitches and colors, respectively. Using this parallel between white noise and white light, rive artistically explores this relationship through a process of splitting sound and light into their individual components and spatializing them around the performance space. Using a bespoke software FM synth created in Pure Data, an algorithmic composition is manipulated sonically exploring intense noise and finely tuned pulsating tones. Using audio signal analysis, pitch and amplitude are mapped to the color and brightness of lights placed next to each loudspeaker. As noise is torn apart and shaped into pitched tones, white light is split, revealing coruscating colors that fill the darkened performance space.

Quantum Enigma

Audiovisual performance

Robert B. Lisek

Robert B. Lisek, PhD, is an artist, mathematician, and composer who focuses on systems and processes (computational, biological, social). Lisek is a pioneer of art based on machine learning and artificial intelligence.

The composition focuses on fundamental processes in the universe such as entropy and randomness. It uses machine learning methods, such as recurrent networks and reinforcement learning, and analog random numbers generators from germanium and the radioactive decay of thorium.
Randomness is important when you want the neural network to create different possibilities as an output from the same input. Good random number generators enable the avoidance of situations when a neural network gets fixed in local minima.

Disenchanted Island

Audiovisual composition

Olga Neuwirth & Tal Rosner

Olga Neuwirth (b. 1968, Graz) is an Austrian composer.
Tal Rosner is BAFTA-award winning video designer and director. His
work spans orchestral music, theatre and dance—alongside large-
scale projection mapping and brand/commercial ventures.

Disenchanted Island by Olga Neuwirth is a milestone in its pioneering
combination of music composition, scientific research and novel 3D
audio technologies. Inspired by the novel »The Encantadas« by Her-
man Melville and Luigi Nono's major work »Prometeo«, this interacti-
ve audio/video installation provides the audience with an outstanding
and compelling exploration of space and sound. Tal Rosner's digital
assemblages, some simple and some complex, illustrate the sounds-
cape with an additional perspective. Using photographic and imagi-
nary fragments of San Lorenzo's architecture and its surroundings
as his base, he processes the forms in a way that allows new view-
points, rooted in the principles of parametric design. The work has
been commissioned by IRCAM and the Centre Georges Pompidou.

Closer/Farther   Interactive installation

Nuno Cabrita

Nuno Cabrita is a Portuguese artist whose focus on digital technology seeks to explore the aesthetic possibilities of immersive experiences in interaction with the physical world through light, sound and space.

Closer/Farther is an interactive installation that explores the idea of vulnerability in human relations through spatial dynamics, focusing on three dimensions of the relationship with the other: intimate space, personal space, and social space. It is meant to be used by multiple people, in a relational logic that assumes the work of art as the space of encounter and the creation of interpersonal relations. Its audiovisual behavior is physically embodied in a sculpture, mirroring the actions of the people around the exhibition space.

Sonic Current

Sound installation

Kosmas Giannoutakis

Kosmas Giannoutakis investigates experimental music forms as emergent organization that identify and catalyze unpredictable and unrepeatable music qualities.

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Sonic Current is a site-specific sound installation that transforms architectural locations into "sonic conscious" organisms. The transformation of the site into a body, with its sense organs (microphones) and actuators (loudspeakers), enable the site to articulate and manifest itself in an open dialogue with its visitors. Sounds from visitors, the environment, or other exhibited installations, captured as external stimuli by the microphonic "ears", are distributed over a digital audio network which is inspired by neuronal processing. Inside the high-dimensionally dynamic, self-regulating network, sound circulates recursively in multiple recurrent layers, resulting in diversely fragile resonant frequencies. The network output is assigned to the loudspeakers, which radiate the neuronally processed resonances back to the site. Sound, as information, electric current, or organic fluids, is the precious vital substance that sustains "artificial sonic life" on the site.

Estonian Audiovisual Compositions

Paolo Girol (curator)

Paolo Girol (b. 1972) is an associate professor of audiovisual composition at the Estonian Academy of Music.

The installation Estonian Audiovisual Compositions consists of a selection of creative works realized in the Audiovisual Composition course at the Composition Department of the Estonian Academy of Music, Tallinn, Estonia. The Audiovisual Composition course (AV) is one of the four courses offered by the Composition Department. The AV is a school of electroacoustic music composition that also offers the possibility to investigate and explore the visual domain. The highest aim of this course is to educate composers who will be able to compete in today's contemporary music scene where, besides knowledge of music, extended knowledge is essential. For the Composition Department "extended" means knowledge related to music technology and visual domain skills, which help the composer to promote his/her creativity in today's highly competitive scene.

»I Rooms II Singularity II« (2017): an explosion of intelligence resulting in a powerful super-intelligence that would, qualitatively, far surpass all human intelligence.
Robi Jõeleht (b. 1987) is a professional designer and an audiovisual composition student at the Estonian Academy of Music.

»Twelve Ears and None« (2015) is inspired by the writings of Michel Chion. Different characters described in the book Film, a Sound Art are the source for an audiovisual journey.
Sander Tuvikene (b. 1984) is inspired by scientific constructs and how they change our perception of reality.

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»Reflection« (2017). The electronic sounds reflect the solo flute and in some parts the solo flute reflects the electronic sounds. The video reflects both – the flute and the electronic part – so that the three elements (solo flute, electronic sounds, and video) are highly dependent on each other and melt into one.
Johanna Kivimägi (b. 1992) has a Bachelor degree in composition and is currently studying electroacoustic composition at the Estonian Academy of Music. An important part of her work is collaborations.
Valentin Siltšenko (b. 1977) has an IT background and in his works he uses different audio, video, and kinetic technologies. He searches for solutions in which technology helps to achieve the artistic purpose.

»Statera fluentem Via Amor« (2017) has four parts and the titles of the parts combine to make up the Latin phrase. The poetic meaning of the phrase is: Balance is kept through love.
Markus Robam (b. 1991) is a composer and audiovisual artist. He studied instrumental composition, composing for film, and audiovisual composition.

»Something Is Wrong« (2017) does not seek to judge or draw a line between good/bad, but something is wrong in the world that surrounds us; therefore, something might be wrong inside of us.
Einike Leppik (b. 1986) is a composer and audiovisual artist. Her main interest is the emotional sensibility of art. Her works transcribe the controversial surrounding world into a poetic experience.

»Insomnia« (2017) wants to create an entity, wants to visualize insomnia's appearance and sound. It displays the composer's vision of how insomnia would present itself.
Anna-Margret Noorhani (b. 1999) is a young composer studying at the Tallinn Music High School, Tallinn, Estonia.

Quad^2 Interactive installation

Lucas Grey

Lucas Grey has been playing music since the age of eight. While studying sound and image in Düsseldorf he discovered his enthusiasm for the moving image. He tries to connect these two worlds with the visualization of live music.

Quad^2 is an interactive, visual-based room installation in surround sound. Its concept is the recurring transformation of the room itself. Within the installation you experience new ways of exploring the room's spatiality and how you yourself are able to influence your surroundings.
The purpose of the installation is to interact with it. As the visitor you are a necessity that plays an important role in the perception of the room.
By physically picking up a smaller version of the room that you are actually standing in, you have the power to move, distort, or even get rid of the room that surrounds you.

Installations

Summer of Love

Sound installation

Douglas Henderson

Douglas Henderson's work harnesses the energies of sound both as a sensual medium and as a culturally charged fabric of social implication; the dialogue between sound and the visual arts, and the transformative power they can unleash when combined.

Douglas Henderson's Summer of Love is a large, multi-component installation consisting of 15 giant kinetic flowers made of high-tech composites. Each flower sits atop an upward-pointed loudspeaker, and a mechanism that allows it to rotate according to the vibrations of the speaker membrane. A 16-channel electroacoustic composition constructed around beat poet Gregory Corso's controversial poem BOMB, in which he satirically idolizes nuclear weaponry, broadcasts from the flower blossoms. This in turn drives the whirling choreography of the garden and creates a highly complex sound field, as frequencies, reflections, and Doppler shifts continually respatialize the soundtrack.
Summer of Love plays on the paradoxical fear of, and dependence on, the threat of global annihilation. Our obsessive fears of apocalypse, nourished by the media, seem to become the subject of a bizarre fashion show: each generation has its threat(s). In 1967 it was the atom bomb, while today global warming competes with ISIS on the catwalk of doom. With this new work Henderson embraces these fears as a means of conquering them, cultivating a dancing garden to survive The Flood.

Io Tu Esso Sound installation

Sandro Mussida & Paul Modler

Sandro Mussida is a London based composer, cellist and electronic performer. His work investigates the consequences of compositional choices on musical matter, questioning the identity of musical languages and traditions.
Paul Modler is a researcher, musician and composer of computer-oriented music. He is a fulltime assistant and lecturer at Karlsruhe University of Arts and Design (HfG), Germany.

»Io, Tu, Esso« for solo recorded vocal sounds is in conjunction with gesture and argument, robotic conical horn speakers with amplifiers, procedural control of motion and a sound installation by Paul Modler. The vocal samples have been performed by Dome Bulfaro and recorded in Milan, CPM Studios, in July 2017.

Installations

Inside the Geometry:
Space-filling Curve

Virtual reality installation

Chiara Passa

Chiara Passa is a visual artist who holds a M.F.A. from the Fine Arts Academy of Rome, and a Master's degree in new audiovisual media from the Faculty of Modern Literature.

Inside the Geometry: Double Language is a series of virtual reality projects taking the form of site-specific installations. In the ZKM space Google Cardboards are arranged to orchestrate a "space-filling curve" on a wall. With each of the head mounts the audience can explore architecture as an interface, taking a journey beyond physical space. Each geometric figure deconstructs an individual animation into different parts, the same number as there are cardboard viewers. Inside the Geometry: Double Language challenges architecture to render it "vibrant" and "participatory." It is through experience that Inside the Geometry: Double Language addresses the paradox of the modern space-time condition, diluted between physical and liquid space. The spectator is at once blind and ultra-seeing, forced into immersion in the shifts generated by his/her perception of the dual language of geometry.

OBSERVATION II: Come Closer

octophonic sound space

and stereoscopic multiscreen-installation

Yvette Pistor

Yvette Pistor (b. 1970, Aachen, Germany) works on installations, performances, and set design. Research interest: Creating atmospherically dense spaces, that are body and space experiences for visitors. Focused on: "den Körper denken machen" [making the body think].

Eight loudspeakers arranged in a circle define the 10 meters in diameter, darkened, interior installation space, which is unilaterally delimited by three spatially arranged projection surfaces. Spatial sound and video recordings of two dancers and three door elements comprise the basic material of this audiovisual space composition. Its style elements are rhythm, repetition, and the spatial positioning of virtual bodies.
OBSERVATION II: Come Closer describes distance as a condition and undertakes certain approach attempts. As the space is slightly illuminated, the entire installation room is constantly visible. In the meantime, the audiovisual technology creates an immersive space of bodies and doors. As a result both spaces – the visitors' area and the virtual space – are combined. They complement and expand each other, but they do not fade each other out.

Multichannel Sound Art Installation for 16 Plasma Loudspeakers

Lorenz Schwarz

Lorenz Schwarz is active in various fields, including films, sound, performances, and installations. He studied media art and sound technologies at Karlsruhe University of Arts and Design. He mainly focused on spatial sound and sound art and composed music for multichannel systems, working with synthetic sound and multi-channel recordings.

This multichannel sound art installation incorporates 16 experimental plasma loudspeakers. This type of loudspeaker produces sound through an amplitude-modulated high voltage arc. The arc is an omnidirectional sound source with a flat frequency response in the higher frequencies and gives a perfect transient response. Hence, it produces a very clear sound and the audience can walk all around the installation. In addition, its point source characteristics allow precise localization in spatial audio environments. The speakers are staged on custom built glass, aluminium, and steel tables, using laboratory stands to create a minimal lab aesthetic. The sounds being played back are based upon electrostatic discharges of various levels of energy and are algorithmically distributed over 16 loudspeakers. During the performance, the loudspeaker system may play together and form a single 3D sound sculpture, or all speakers are uncorrelated and will be perceived as individual point sound sources.

Pneumatic Sound Field Pneumatic sound installation

Edwin van der Heide

Edwin van der Heide is an artist, composer, and researcher in the field of sound, space, and interaction. He extends the terms composition and musical language in spatial, interactive, and interdisciplinary directions.

In the installation Pneumatic Sound Field a continuum is created between rhythmical perception of sound, spatial perception of sound, and the perception of pitch. A horizontal plane of pneumatic valves is used to produce wind and sound pressure. The result is a breathing spatial sound environment above the audience. The valves used are discrete and have just two states: open or closed. Thus the composition is fully focused on the use of time.

Perspection   Audiovisual installation

Matthew Biederman & Pierce Warnecke

Pierce Warnecke (b. 1983 in California, USA) is a media artist whose
focus is equally split between aural and visual mediums and the many
types of relationships between them.
Matthew Biederman (b. 1972 in Illinois, USA) has been performing,
installing and exhibiting works, which explore themes of perception,
media saturation, and data systems from a multiplicity of perspectives
since the mid nineties. He is currently represented by Art45 and lives
and works in Montreal, Quebec.

**Perspection is an audiovisual installation exploring the perception of
space through the use of projection on a series of specifically orien-
ted projection surfaces and spatialized audio. Trompe l'oiel has been
used throughout the history of image making in order to transport
the viewer outside their physical location in the same way that con-
temporary CGI and virtual reality propose experiences outside one's
body or the virtual transportation of the viewer through technology.
On the contrary, Perspection seeks to embed the physical experience
of perception in place and create a hyperawareness of the act of per-
ception versus a disembodiment or virtual screen space by correla-
ting screen space with physical space.**

**Perspection examines the sound-image relationships from synchroni-
city to independence of visual and sonic cues of perception through
a series of generative audiovisual compositions. Through the use of
multistable imagery and sonics the barrier between the physical and
screen spaces are modulated between distinct and blurred, heighte-
ning the act of perception.**

Sat, 09.09.2017 22:00
HfG_Atrium

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inSonic@night

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Hosted by ichiigai

Saturday evening will end with an concert at the ZKM_Cube. After-
wards, the visitors can enjoy inSonic@night at the HfG_Atrium. The
public can look forward to an exciting program by young, aspiring
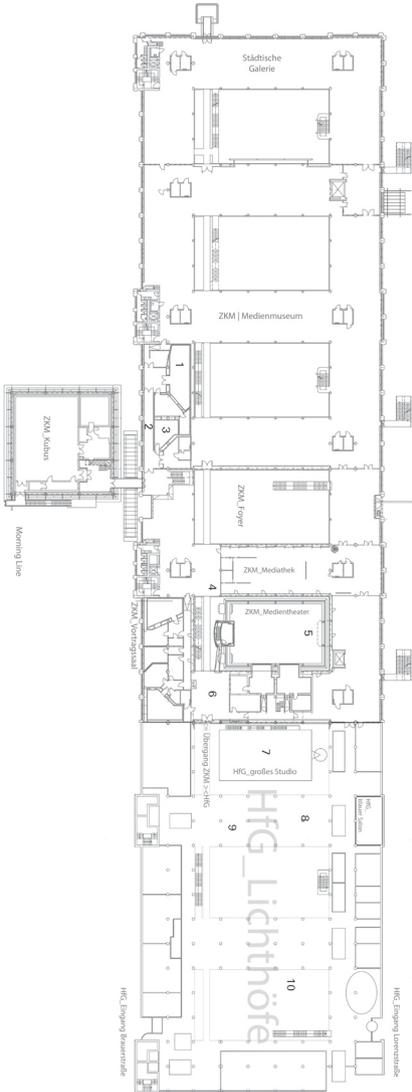sound artists and DJs.

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urte
luxxuryproblems
irel.ier
lybes dimem
ilaria atonalli
lauren leis
thirdworldlabour

Building Plan

Städtische Galerie

ZKM | Medienmuseum

ZKM_Kubus

1

2

3

ZKM_Foyer

ZKM_Mediathek

ZKM_Medientheater

4

5

Morning Line

ZKM_Vortragssaal

6

7

Übergang ZKM > HfG

HfG_großes Studio

8

9

HfG_Brauer Spore

HfG_Lichthöfe

10

HfG_Eingang Brauerstraße

HfG_Eingang Lorenzstraße

Imprint

Festival Team:

Artistic Direction
Ludger Brümmer

Project Lead
Yannick Hofmann

Organisation
Dorte Becker

Program Booklet
Yannick Hofmann

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Ludger Brümmer, Markus Nois-
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