DAS NEUE KUNSTEREIGNIS IM DIGITALEN ZEITALTER

GLOBALE

Fr–So, 5.–7.2.2016

Performing Sound, Playing Technology

A Festival on Contemporary Musical Instruments and Interfaces

Konzerte, Performances, Vorträge, Hacklab, Podiumsdiskussion

In Kooperation mit

Universität der Künste Berlin

TU berlin   ³D miN   4DSOUND   EINSTEIN

MUSIC

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Performing Sound, Playing Technology

A Festival on Contemporary Musical Instruments and Interfaces

»Performing Sound, Playing Technology. A Festival on Contemporary Musical Instruments and Interfaces« provides insights into the development of innovative instruments and interfaces in the field of electronic music. A total of three concert evenings on subjects such as instrument prosthetics, established tools thought new, live coding, tinkering and dancing. In addition, research projects will be presented in a symposium, and there will also be a possibility to experiment in innovative instruments and interfaces or else, under supervision, develop the latter oneself in a »Hacklab«.

The festival thus offers a range of perspectival approaches the objective of which is to encourage and support the critical examination of artistic and scientific potential in contemporary musical instruments, while at the same time thematizing the question of the reciprocal influence of music and technology: In what ways are new technologies applied to contemporary instruments? What references can meanwhile be made between instruments? How are they played and what kind of music is produced with them? The festival visitor traces the various perspectives of instrumentalists, developers, artists and scientists by way of theoretical and practical approaches, and thereby inspires participants to speculate on possible future scenarios.

Part of the research project »3DMIN Design, Development and Dissemination of New Musical Instruments«.

Freitag

20.00

Concert I with live performances by Peter Blasser, Till Bovermann, Alberto de Campo, Amelie Hinrichsen, Hannes Hoelzl, Dominik Hildebrand Marques Lopes, Fredrik Olofsson
ZKM_Cube

p. 14

Afterwards:

Concert II with live performances by Bjørnar Habbestad, Yen Tzu Chang, Michael Fischer
ZKM_Cube

p. 15

Samstag

10.00

Till Bovermann: The 3DMIN Project
ZKM_Lecture Hall

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10.20

Alberto de Campo: Creating Perfect Moments – Kairos theory and practice for audiovisual improvisation
ZKM_Lecture Hall

p. 4

10.45

Dominik Hildebrand Marques Lopes: Presenting PushPull – an instrument prototype
ZKM_Lecture Hall

p. 5

11.10

Amelie Hinrichsen: Movement meets Material – An improvisational Approach to Design
ZKM_Lecture Hall

p. 6

11.35

Till Bovermann: Music making in the wild
ZKM_Lecture Hall

p. 6

12.00

Chikashi Miyama: Black Vox and composition for self-built interfaces
ZKM_Lecture Hall

p. 7

12.30

Patrick Borgeat, Juan Romero: Live Coding and The Mandelbrots
ZKM_Lecture Hall

p. 7

15.00

Marco Donnarumma: Configurations: Performing bodies, vibrations and machines
ZKM_Lecture Hall

p. 8

16.00

Peter Blasser: Ciat-Lonbarde, Karlsruhe circuit, and the Ovalsynth
ZKM_Lecture Hall

p. 9

17.00

Atau Tanaka: Body as Instrument
ZKM_Lecture Hall

p. 10

20.00

Concert III with live performances by Atau Tanaka, Marco Donnarumma, Stelios Manousakis, Chikashi Miyama
ZKM_Cube

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Afterwards:

Concert IV with live performance by Benoît and the Mandelbrots
DJ set by Jago
ZKM_Music Balcony

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Sonntag

10.00

Diana Cardoso: New Models of Composition using DMIs
ZKM_Lecture Hall

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10.30

Stelios Manousakis: The body as interface through interference: Wireless Information Retrieval in the Hertzian Field
ZKM_Lecture Hall

p. 11

11.00

Ludger Brümmer: How to interface with space
ZKM_Lecture Hall

p. 12

11.30

Panel discussion
ZKM_Lecture Hall

p. 13

14.00

Concert V: Presentation of the results and performances of the 4DSOUND Hacklab
ZKM_Media Theater

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Symposium

Session I
Chair Ludger Brümmer

**Sa 06.02.2016
10:00–13:30**

Location ZKM_Lecture Hall

Till Bovermann: The 3DMIN Project

10:00 This talk will give an overview on 3DMIN, a joint project of UdK Berlin and TU Berlin in which an interdisciplinary team of artists and researchers look into the various aspects of historical and contemporary electronic musical instruments.

Till Bovermann received his PhD in Computer Science for his work on Tangible Auditory Interfaces at Bielefeld University. He worked as a researcher at various institutes of Bielefeld University and the Media Lab of Aalto University in Finland.
Since 2014, Till is the principal investigator (UdK Berlin) of the joint project "Design, Development and Dissemination of New Musical Instruments" (3DMIN).

Alberto de Campo: Creating Perfect Moments Kairos theory and practice for audiovisual improvisation

10:20 Improvisation is notoriously non-trivial – on the one hand, everyone improvises all day in everyday life, and artists create music and visuals in a flow of on-the-spot decisions; on the other hand, achieving magical moments of coincidence of serendipitous elements is extremely elusive! In the context of Generative Art / Computational Art at UdK Berlin, many people explore this issue, and we have created many realtime systems for audiovisual performance. While designing sounds, images, interfaces, mappings, strategies, and playing with them, we also experiment from higher level perspectives: Adopting concepts from AI and second-order cybernetics, we develop concepts and implementations for improvising in networks of human and machinic actors that are both surprising and artistically productive. This talk aims to provide orientation in this large possibility

space, and discusses our main concepts: Kairos Theory (strategies for perfect moments), second order virtuosity (working with extremely flexible setups), metacontrol (losing precise control to gain intuitive influence), and random orbits (tuning randomness from subtlety to full risk, uniqueness to full repeatability).

Alberto de Campo is a composer and performer, and teaches Generative Art/Computational Art. He explores a wide range of topics in collaborations with other artists and students: Code-based network music performance, biologically informed/inspired art such as the project Varia Zoosystematica, hybrid audiovisual performance instruments and interactive systems, and improvisation strategies in different contexts. Since 2009, he is Professor for Generative Art/Computational Art at the University for the Arts Berlin.

Dominik Hildebrand Marques Lopes: Presenting PushPull – an instrument prototype

10:45

This talk will reflect on the design process and demonstrate the current state of PushPull, an instrument prototype developed by Till Bovermann, Amelie Hinrichsen and Dominik Hildebrand Marques Lopes within the 3DMIN research project.

Dominik Hildebrand Marques Lopes has a degree in audio and video engineering from the Institute for Music and Media Düsseldorf. Furthermore he studied Arts and Media at the University of the Arts (UdK) Berlin, focusing on multichannel sound installations, improvised electronic music, building kinetic/cybernetic (sound-)objects, musical recording, and live-coding. He also holds a Meisterschüler (distinguished graduate) degree in Arts and Media. Currently he is working as a researcher at UdK Berlin ("Design, Development and Dissemination of New Musical Instruments"). As a computer musician, his main focus is on developing and performing with physical musical interfaces whose constraints and functionality are chosen to exhibit unique behavior (or life of their own) arguably equally rich as many acoustic instruments. This approach leads to very direct bodily control of computational processes which hopefully can also be experienced as such by the audience.

Amelie Hinrichsen: Movement meets Material An improvisational Approach to Design

11:10 When developing a musical instrument one of the questions asked by Amelie Hinrichsen is how to address and implement corporeality within a design process. Over the past 3 month she organized a transdiciplinary workshop series combining contemporary dance, composition and experimental music. Introducing the status quo of her research she will demonstrate why and how improvisation serves as a promising source of knowledge and inspiration when it comes to instrument building.

Amelie Hinrichsen is a Research Associate in the research project 3DMIN at the Berlin University of the Arts. As professionally trained carpenter she completed her studies in Product Design at the Berlin University of the Arts in 2012. With her final project she won the DMY Young Talents Jury Award in 2013. Amelies work ranges from film over product- to interface design. It reflects her interest in combining theoretical research with a practical approach.

Till Bovermann: Music making in the wild

11:35 Music making has a long tradition and so does the selection of places at which music is performed. Over time, such places turned from simple common areas located i.e. in the centre of a settlement to intentionally designed locations such as churches and concert halls that foster sonic qualities by architectural acoustic elements. Sometimes, however, it feels necessary to escape established performance places and enrich soundscapes of areas by music that are not commonly accepted to be environments for music making. Areas that are off-the-grid, wild. This talk examines the nature of such contemporary wilderness performances, touching aspects like composition, the act of playing, the choice of instruments, and the interpretation of the term „performance" itself.

Chikashi Miyama: Black Vox and composition for self-built interfaces

"Black Vox" is a piece for a self-built musical interface "Peacock". This interface is equipped with 35 infrared proximity sensors and allows the user to control up to 35 musical parameters simultaneously with the movements of his or her hands without touching the device. This lecture presents the development of the interface, introduces the creative process of the composition, and raises the general issues of musical creation for self-built musical interface, such as the mapping between obtained data from the sensors and musical parameters, and the structuration of the composition.

12:00 Uhr

Chikashi Miyama is a composer, software developer, interface designer, and performer. He studied computer music in Japan, Switzerland, and USA and received Ph.D from University at Buffalo, New York. In 2011, he received a research grant from DAAD and moved to Germany. He is currently teaching at College of Music and Dance Cologne and working as a software developer at ZKM Karlsruhe.

Juan A. Romero, Patrick Borgeat: Live Coding and The Mandelbrots

In this talk we want to discuss properties, opportunities and issues of live coding, an emerging discipline in computer music and media art where sound/music/ visual algorithms are performatively written and modified with code as part of an imporivisational performance. We want to share the observations we did while playing with our live coding band Benoît and the Mandelbrots. We extensively tried to push the live coding paradigm into new contexts for over five years, true to the motto "live code everything, everywhere". This will include general knowledge we learned about live coding in a group, as well as explicit examples of our work such as performing a sound installation, music for silent movies, improvising with traditional instrumentalists and playing at Algoraves.

12:30 Uhr

Juan A. Romero | Born in Colombia in 1982. Classical guitar studies and musicology, M.A. in music informatics. Since 2011 research assistant and teacher at University of Music Karlsruhe – IMWI. Has participated in several collaborations and projects with different artists, like Georg Hobmeier (performance), Reinhold Bidner (film, media art), Anne Veinberg (piano) and others.

Patrick Borgeat | Born in 1985. Received a B.A. in Musicology/ Music Informatics, currently pursuing his Master degree. From 2010-2013 teacher for programming at IMWI, University of Music Karlsruhe. Active in diverse fields such as live coding, live visuals, generative art, web experiments and games.

Patrick and Juan are collaborators for over 10 years, perform together regularly with Benoît and the Mandelbrots and their audiovisual duo Ganzfeld and organized the 2013 live.code.festival in Karlsruhe.

Session II
Chair Till Bovermann

**Sa 06.02.2016
15:00–18:00**

Location ZKM_Lecture Hall

Marco Donnarumma:
Configurations: Performing bodies, vibrations and machines

15:00 For the human being sound is sound when it is either heard or physically felt. It is in our body that acoustic waves become a discernible event that we can feel, listen to and define as a sound. From this point of view, sound is an effect of the human nerves caused by our perception. Sound does not however originate only outside of the human body, but rather, the organs of the body themselves are a source of sound, a sound which can be amplified and diffused, as I have done in my series of biophysical

music performances. In those works I treat sound as a material force: I deploy the whole range of material phenomena produced by acoustic vibrations in order to produce new physical, perceptual and corporeal experiences. In this talk, I will delve into the capacity of sound to be a vector of sensory alteration and a means of physical, affective connection among performers, machines and audiences: sound as a medium through which the relation of human bodies and machines can be reconfigured.

Marco Donnarumma (PhD, MSc, BA) is an artist and writer. He merges sound art and performance art through science and technology. He creates performances, concerts and installations using and abusing human bodies, sound, infrasound, light, algorithms, body sensors and loudspeakers. His works rely on the material force of sound to produce intensely intimate encounters of bodies and machines, and vivid sensory and physical experiences. His creative process is a continuous feedback between artistic intuition, scientific experiments and development of custom technologies.

Peter Blasser: Ciat-Lonbarde, Karlsruhe circuit, and the Ovalsynth

Peter Blasser will demonstrate analog synthesizers: the **16:00** Plumbutter drum and drama machine, Sidrax organ using flexible wooden „barres", the Tocante series of touch-instruments tuned simply by the capacitor series. Also he presents plans for a work in progress- starting with a baby toying with a stereo, he recuperates a mysterious oval synth, with two giant knobs, catered to „pre-lingual" gestures. He describes intuitive instruments that process torque gestures, using nobs, or non-knobs.

Peter Blasser, designer and builder of synthesizers at ciat-lonbarde.net, practices deep consultation with clients who seek rich interactions with their electronics. The instruments manifest electronic modulations through nodes, case flexure, and radio fields. He teaches circuit design and instrument building in classes and workshops, culminating in performance or installation.

Atau Tanaka: Body as Instrument

17:00 This talk will consider the human body as musical instrument. To do so, we look at the use of physiological signals, notably the electromyogram, as a way to capture the gestural intention and effort of the performer. The use of biomedical technologies as computer interfaces, however, do not automatically comprise a musical instrument. To imagine a system that affords expressive musical performance, we will think about the notion of the "instrument", and contrast it with concepts of the "tool" predominant in our technoculture. We will also consider the word, "performance" and its various artistic, technical, and social meanings. Through this extended vision of musical instruments, we will consider how biosignals provide a virtual instrument, or perhaps even turn performer into instrument.

Atau Tanaka creates musical instruments using sensing technology to capture movements and gestures of musicians. Atau studied at CCRMA Stanford, and conducted research in Paris at IRCAM. His first inspirations came upon meeting John Cage during his Norton Lectures at Harvard and would go to on re-create Cage's Variations VII with Matt Wand and :zoviet*france:. In the 90's he formed Sensorband with Zbigniew Karkowski and Edwin van der Heide and worked in Japan, playing with Merzbow, Otomo, and KK Null. His work has been presented at the ICA, NTT/ICC, Palais de Tokyo, Ars Electronica, Transmediale, Eyebeam, and SFMOMA. He has been researcher at Sony Computer Science Laboratory Paris,and Artistic Co-Director of STEIM Amsterdam. He conducts research in music and gesture in the Embodied Audio Visual Interaction (EAVI) research unit and is professor and Director of Research in Computing at Goldsmiths, University of London.

Diana Cardoso:
New Models of Composition using DMIs

This talk is about my PhD and artistic Research: New Models of Composition using DMIs (Digital Musical Instruments) – which focuses on the design of DMIs, including the study of DIY (do it yourself) sensors, specific actuators for musical gesture and performance, and multimodal composition strategies. I want to promote the use of specific DMIs in live performance situation and to question the current composition paradigms. It is imperative to re-think the definition of musical instrument and its role in the musical creation. The different possibilities about using DMIs, originate distinctive approaches and different interactions between creativity in performance and musical interpretation of the musical instruments.

10:00

Diana Cardoso (b. 1983) is a PhD candidate at UCP (PT), granted with a Scholarship from FCT. Her work focuses on the design of DMIs – including study of sensors, specific actuators for musical gesture and performance - and multimodal composition strategies. Former collaborations include ZKM, HFM Karlsruhe, CITAR (PT) and IDMIL - McGill University (MTL). Last presentation was at ISEA 2015, Vancouver.

Stelios Manousakis:
The body as interface through interference:
Wireless Information Retrieval in the Hertzian Field

Apart from distributing our data, wireless communication has a side effect: it conveys physical information about space and the bodies within it. In this talk, Stelios Manousakis will present a new technology he developed for device-free sensing of presence and movement using WiFi waves

10:30

and bodily interference. The technology, inspired by wireless localization, radio tomography, and radars, uses techniques adapted from Music Information Retrieval to analyze and utilize wireless signals in meaningful ways. Stelios will talk about the technology, system and context, and how his artistic trajectory led him to this discovery, while touching on the subjects of live electronics performance and embodiment, interfaces, interactivity, mapping, spatialization, feedback and cybernetics.

Stelios Manousakis is an artist exploring relationships between time, space, body, and system. His practice lies in the intersection of art, philosophy, science and engineering, extending from performances, to environments and interactive installations, to compositions and fixed media. He has also co-founded several music ensembles, multimedia groups, and the intermedial Modern Body Festival.

Ludger Brümmer: How to interface with space

11:00 There are several ways how to create movement data for spatial compositions. Many of them are encoded into the user interface of rendering software like Spat, Zirkonium, ZirkOSC etc. These topic becomes especially critical when many channels of audio should be controlled by one person in realtime. Here are strategies needed to combine the input device with an intelligent beheaviour or one has to reduce the numbers of channels controlled. The lecture will guide through thoughts and experiments which were performed through the last decade at the ZKM|Institute for Music and Acoustics.

Ludger Brümmer is a composer, former professor of composition at the Sonic Research Centre in Belfast, and, since 2003, head of the Institute for Music and Acoustics at the Center for Art and Media in Karlsruhe (ZKM), where he initiated the sound dome project. He is a member of the Academy of Arts in Berlin and professor at the Academy of Design in Karlsruhe. The central focus of his music is the use of the computer as an artistic means of composition as well as of electronic sound production. Furthermore, Brümmer has realized a series of multimedia and interdisciplinary projects, and experimental music pieces. Be-

sides purely electroacoustic works, Brümmer has also created compositions for dance and live electronics; additionally, he is interested in the interaction between acoustic instruments and live video.

Panel Discussion

As part of this panel discussion insights as well as questions and problems of the symposium can be included **11:30** and discussed again. The panel discussion will be moderated by Ludger Brümmer, Head of Department of the ZKM | Institute for Music and Acoustics.

Concert I

Live performances by Peter Blasser, Fredrik Olofsson, Alberto de Campo, Hannes Hölzl, Dominik Hildebrand Marques Lopes, Amelie Hinrichsen and Till Bovermann

The appearance of US-American artist **Peter Blasser** makes this concert evening an absolute highlight: On this evening, Peter Blasser presents a concert performance for a home-made drum machine and organ together with some other creative surprises from his electroacoustic bag of tricks. The innovative synthesizer and musical instruments, which Peter Blasser develops and distributes through his website in close cooperation with music lovers all over the world, know no conventions and show DIY developers a huge range of options for developing and modifying instruments.

3DMIN is a project at the Berlin University of the Arts and the Technical University of Berlin, within whose framework interdisciplinary scientists and artists discuss historical and contemporary electronic musical instruments. As part of this project, the accordion-style "PushPull" instrument was developed by **Dominik Hildebrand Marques Lopes**, **Amelie Hinrichsen** and **Till Bovermann**. The three artists appear with a new, exciting performance, which was designed especially for this instrument. In addition, a commissioned piece by composer and performance artist **Fredrik Oloffson** as well as a solo performance by **Dominik Hildebrand Marques Lopes** will be heard.

Hannes Hoelzl and **Alberto de Campo** team up with **Daniel Hromada** for their audiovisual performance "AudioVisual Anarchivism: the Ed Snowden / ZKM edition" which algorithms draw upon materials derived from Snowden's leaks and other publicly available sources about institutionalized paranoia.

Hannes Hoelzl, Alberto de Campo, Daniel Hromada:
AudioVisual Anarchivism **the Ed Snowden / ZKM edition**
Dominik H. M. Lopes: *Conversational Communication*
Fredrik Olofsson: *biopump*
Amelie Hinrichsen, Till Bovermann &
Dominik H. M. Lopes: *PushPull/WaveSetter*
Peter Blasser: *Synth Song, Drum and Drama, Space Song, Organ Interlude, Floating Head Song*

Concert II

**Fr 05.02.2016
After Concert I**

Location ZKM_Cube

Live performances by Bjørnar Habbestad, Michael Fischer, Yen Tzu Chang

Norwegian flautist, composer and sound artist **Bjørnar Habbestad** will consolidate live, electronic flute tones with fixed media into a spatial, musical concert piece in his performance "Bottom/Up/Top/Down".
Yen Tzu Chang will present her audio-visual "Self-luminous 2" performance. She developed her own instrument for this, with whose help she can interact on the stage with light and sound equally.
Renowned musician, composer and ensemble director **Michael Fischer** works as a saxophonist among other things with feedback and turns his instrument into a laboratory of different physical phenomena. The new digital light module control of his saxophone was developed in 2015 during his guest artist residency at the ZKM | Institute for Music and Acoustics and will be presented for the first time on this concert evening.

Bjørnar Habbestad: *Bottom/Up/Top/Down*
Michael Fischer: *Shining*
Yen Tzu Chang: *Self-luminous 2 – Unbalance*

Concert III

**Sa 06.02.2016
20:00**

Location ZKM_Cube

Live performances by Atau Tanaka, Marco Donnarumma, Chikashi Miyama, Stelios Manousakis

Artist and scientist **Atau Tanaka** is considered the absolute luminary in the field of sensor instruments and artistic use of movement and gesture recognition. He has carried out important research work in this field for many years and holds a professorship at the renowned Goldsmiths Institute, University of London. Among other things, he will present his current performance, "Myogram": Four sensors fixed to his forearms will translate his muscular movements and nerve impulses in real-time, so that sounds can be synthesised and spatialized with the help of his expressive gestures.

Italian artist **Marco Donnarumma** is well-known for his particularly physical performances. He will be presenting his new audiovisual performance "Corpus Nil", within whose framework the bioelectrical potential of his own body and his bioacoustic sounds will become the starting point of monolithical light and sound sequences.

Composer, software developer and interface designer **Chikashi Miyama** will present two performance pieces. As part of "Black Vox", his hand gestures will be recognised by the 35 infrared sensors of his musical instrument, Peacock, which he developed especially for artistic performances. The gestures simultaneously control over 300 musical parameters.

Stelios Manousakis works on the cutting edge of art, philosophy, science and technology and presents an exciting interaction with the potential artistic uses of wireless communications as part of his "Hertzian Field #2". A triangle of wifi transmitters and receivers produce an electromagnetic field, which is influenced by the performer and his own electromagnetic body resonance.

Atau Tanaka: *Myogram, Le Loup, Lifting*
Marco Donnarumma: *CORPUS NIL*
Stelios Manousakis: *Hertzian Field #2*
Chikashi Miyama: *Black Vox, Modulations*

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Concert IV

Sa 06.02.2016
After Concert III

Location ZKM_Music Balcony

<u>Live performance by</u>
<u>Benoît and the Mandelbrots</u>

Benoît and the Mandelbrots are mainly dedicated to live coding: the process of writing software in real-time. They use the programming language itself as at first sight non-intuitive, but simultaneously expressive interface in order to improvise sound and music. Sonic conceptions and structures are expressed live as source code and interpreted by the computer. The laptop musicians are connected over a network, enabling them to communicate, synchronize, and share data. Sound and music are generated specifically to fit the room characteristics and the audience of the performance. The musical results vary from electronica and ambient to experimental, noise, drones and avant-garde depending on the event, audience, venue and course of the collective improvisation.

Concert V

A module of the festival is the HackLab, which is being organised together with the 4DSOUND collective. Since 2008, 4DSOUND has been developing an innovative loudspeaker system, which expands the opportunities of creating and experiencing sound in rooms. With the help of 16 omnidirectional loudspeaker columns, an immersive sound environment is created. The HackLab allows participants to develop new approaches and tools together with ideas for working with spatial sound. Approx. 15 artists will be working with the system in the ZKM_Media Theater between 4th and 7th February 2016. A presentation of the results will take place on 7th February 2016 between 14:00 and 17:00 in the ZKM_Media Theater

So 07.02.2016
14:00

Location ZKM_Media Theater

Upcoming Events

04.03.2016

Location HfG_Atria 4

ZKM presents 4DSOUND: Points on the Curve

Concert with the new loudspeaker system 4DSOUND:
Koenraad Ecker, Edgar Varèse and others
21:30, 13/9 €

05.03.2016

Location HfG_Atria 4

Artist Talks
Within the framework of ZKM presents 4DSOUND
16:00–18:30, Free entry

ZKM presents 4DSOUND: Points on the Curve

Concert with the new loudspeaker system 4DSOUND:
Cristian Vogel, Alyssa Moxley, Iannis Xenakis and others
21:00, 13/9 €

11.03.2016

**Location ZKM_Cube,
ZKM_Music Balcony**

raster-noton. white circle

Audiovisual installation for the ZKM_Sound Dome on
the occasion of the 20th anniversary of raster-noton
19:00, Free entry

11.03.2016

Location HfG_Atria 4

raster-noton 20th anniversary

Live performances by artists of raster-noton using
4DSOUND:
Kangding Ray, Kyoka, Frank Bretschneider
21:00, 13/9 €

Team
Performing Sound,
Playing Technology

Artistic Direction
Ludger Brümmer, Marie-Kristin Meier, Till Bovermann, Sarah-Indriyati Hardjowirogo

Production Management
Yannick Hofmann

Organisation Hacklab
Luise Wiesenmüller

Programme
Yannick Hofmann

Moderation
Ludger Brümmer, Till Bovermann, Marie-Kristin Meier

Tonmeister
Sebastian Schottke

Recordist
Anton Kossjanenko, Brian Questa

Hand
Alexander Hofmann, David Luchow, Alexander Lunt, Manuel Urrutia, Marcel Mendel

Light, Event Engineering
Hans Gass

Hand Light, Event Engineering
Mirko Posluschny

ZKM | Institut for Music and Acoustics
Ludger Brümmer (Head of Department), Caro Mössner (Secretary), Götz Dipper (Computer Music, System Administration), Marie-Kristin Meier (Research Associate, Publications), Anton Kossjanenko, Sebastian Schottke, Holger Stenschke (Sound Director), Bernhard Sturm (Operations Engineer), Chikashi Miyama (Software Development), Yannick Hofmann, Luise Wiesenmüller (Research Trainee), Robert Krämer (mediaartbase.de)

Impressum

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