

Program

Sunday, 6 February 2022

17:00 – 20:00 Registration

from 18:00 BUFFET SUPPER / Informal get together

Monday, 7 February 2022

08:00 – 08:45 *BREAKFAST*

08:45 – 09:00 Scientific organizers

Welcome and opening

09:00 – 10:00 John Pendry
(online)

Luminal gratings enable: photon localisation, Bloch symmetry breaking, and a novel amplification mechanism

10:00 – 11:00 Ralf Schuetzhold

Optical Analogues for Fundamental Physics

11:00 – 11:30 *COFFEE BREAK*

11:30 – 12:30 Silke Weinfurtnner
(online)

Quantum simulators for fundamental physics

12:30 *LUNCH*

14:30 – 15:30 Michèle Heurs
(online)

Potential and prospects for meta-mirrors in precision metrology

15:30 – 16:30 Stefanie Kroker
(online)

Metamaterials for Measurements at Ultimate Precision

16:30 – 17:00 *COFFEE BREAK*

17:00 – 18:00 Martin Wegener

3D Metamaterials: Chirality and Non-Localilty

18:00 – 18:15 Stefan Jorda

About the Wilhelm and Else Heraeus Foundation

18:15 – 19:00 **Open Discussion**

19:00 *HERAEUS DINNER* at the Physikzentrum
(cold & warm buffet, with complimentary drinks)

Program

Tuesday, 8 February 2022

08:00 – 09:00	<i>BREAKFAST</i>	
09:00 – 10:00	Andrew Webb (online)	Novel materials in magnetic resonance imaging: high permittivity ceramics, metamaterials, metasurfaces and artificial dielectrics
10:00 – 11:00	Rita Schmidt (online)	Tailoring the RF field at ultra-high field MRI with artificial materials
11:00 – 11:30	<i>COFFEE BREAK</i>	
11:30 – 12:30	Alena Shchelokova (online)	Metamaterial inspired wireless coils and pads for clinical MRI
12:30	<i>LUNCH</i>	
14:30 – 15:30	Yuri Obukhov (online)	General structure of electromagnetism: covariant formulation
15:30 – 16:30	Jonathan Gratus (online)	Corrugated Structures and Mathieu's equation for EM generation and particle acceleration
16:30 – 17:00	<i>COFFEE BREAK</i>	
17:00 – 18:00	Poster Flash	
18:00 – 19:00	Poster Session	
19:30	<i>DINNER</i>	

Program

Wednesday, 9 February 2022

08:00 – 09:00	<i>BREAKFAST</i>	
09:00 – 10:00	Robin Tucker (online)	Applications of an analysis of classical Plasmon-Polariton-Brewster Modes in Homogeneous Media with an anisotropic planar interfacial surface admittance tensor.
10:00 – 11:00	Christian Pfeifer	General Linear Electrodynamics: Causal Structure, Propagators, Quantization and quantum energy inequalities
11:00 – 11:30	<i>COFFEE BREAK</i>	
11:30 – 12:30	Christian Bär (online)	Wave equations on curved backgrounds
12:30	<i>LUNCH</i>	
14:30 – 15:30	Philippe Roux (online)	Locally resonant metamaterials : from wave physics to geophysics
15:30 – 16:30	Irina Khromova	NFC wireless charging for multiple devices
16:30 – 17:00	<i>COFFEE BREAK</i>	
17:00	Open discussion	
18:30	<i>DINNER</i>	
20:00	Evening lecture Philipp Klais	A world-famous organ builder from Bonn will talk (in German) about an attempt to make physics analogue approachable, tangible and audible in an increasingly digital world

Program

Thursday, 10 February 2022

08:00 – 09:00	<i>BREAKFAST</i>	
09:00 – 10:00	Walter Fuscaldo	Microwave Generation of Localized Waves Through Leaky-Wave Antennas Based on Metasurfaces
10:00 – 11:00	Vahid Sandoghdar (online)	Quantum Metamaterials with Magnetic Response at Optical Frequencies
11:00 – 11:30	<i>COFFEE BREAK</i>	
11:30 – 12:30	Igor Tsukerman	Homogenization of Metamaterials: Symmetry Breaking and “Bulk Transition”
12:30	<i>LUNCH</i>	
14:30	Excursion	
18:45	<i>DINNER</i>	

Program

Friday, 11 February 2022

08:00 – 09:00	<i>BREAKFAST</i>	
09:00 – 10:00	Yakov Itin	Finsler's metric as a novel tool for wave propagation analysis
10:00 – 11:00	Agostino Monorchio (online)	Multifunctional metasurfaces with absorbing, reflecting and high impedance properties for ICT and Biomedical applications
11:00 – 11:30	<i>COFFEE BREAK</i>	
11:30 – 12:30	Rebecca Seviour (online)	Metamaterial Mediated EM Wave Generation and Amplification
12:30	<i>LUNCH</i>	
14:30 – 15:30	Thomas Bertuch (online)	A Review of RF Metamaterial Applications at Fraunhofer FHR
15:30 – 15:45	Scientific organizers	Conclusion / Poster Award

End of seminar and departure