

Seminar on Computational Laser Systems (Measurement Systems Seminar/BIOLAS), SoSe 2024

Date: Monday, 3. DS., 11:10 – 12:40, BAR I88

| Date | WK | Lecturer | Topic |
|---|----|---|---|
| 08. April (LB) | 15 | Dr. Robert Kuscmierz | Introduction to Seminar & Presentation of Topics for Students |
| 15. April (JD,JC) | 16 | Prof. Lin Center for Systems Bi- ology, Harvard Uni. | In vivo flow cytometry: blood cell analysis without drawing blood (Student Chapter) |
| 19. April, 13:00, BAR 17 | 16 | Ming Lin | Learningbasierte Optimierung einer Phasenmaske für 3D Bildgebung mit Neuronalen Netzen (<i>Defense SA, TG</i>) |
| 22. April | 17 | Ingo Langheinrich, polychip.ai | Threshold methods versus deep learning - when it makes sense to use "AI"-algorithms in machine monitoring (RK) |
| 25 April, Th. (voluntary), 11:10, BAR17 | | Hannes Bischoff | Ultrasound Target Tracking with a Reduced Number of Receiving Elements (<i>DA intermediate Report, DW</i>) |
| 29. April | 18 | Miao Yu Yuezhen Xu | Diffraction neural network for mode demultiplexing in multimode fibers (<i>DA intermediate report, QZ</i>) Water monitoring in fuels cells using ultrasound resonance spectroscopy (<i>Defense SA, ZD</i>) |
| 02 May Thursday (volun- tary), shift from 9:20 to 15:00, BAR17 | | Tobias Irrgang | Ultrasound Imaging with Single-Channel Ultrasound Probes Using Compressive Multimode Waveguides (<i>DA intermediate Report, DW</i>) |
| 06. May (JC until 12:00 only) | 19 | Luca Linhsen | Endoscopic, confocal fluorescence imaging through phase-corrected multi-core fiber bundles Mehrkern- faserbündel (<i>Defense SA, ES,RK</i>) |
| 13. May | 20 | Yared Zena, Dr. Caspar Hopfmann, IFW | Highly efficient sources of entangled photon pairs for industrial environments using GaAs quantum dots |
| 16. May | 20 | ... | ... |
| 20. May | 21 | -- | No Seminar: Pfingsten / Pentecost |
| 27. May | 22 | Zixuan Cai | Motion blur invariant sensor for full-field deformation measurement at fast high-performance rotors (<i>test presentation (ZC,JL) for conference „Sensoren und Messsysteme“, 11+12 June 2024, Nuremberg</i>) |
| 03. June | 23 | Jiali Sun | PI-DNN for phase retrieval in multimode fibers (<i>DA intermediate report, QZ</i>) |
| 10. June | 24 | Robert Wendland | Optogenetic control of cardiomyocytes (<i>DA intermediate report, FS</i>) |
| 13 June, Thu, 9:20, BAR17 | 24 | Sai Nikhilesh Pilla Hannes Bischoff | Mode decomposition using Reservoir Computing (DP) Compressive-Sensing for Ultrasound Imaging with a Reduced Number of Receiving Elements (<i>Defense DA</i>) |

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| | | | <i>and test presentation Drübeck, DW)</i> |
| 13 June, Thu, 11:10 BAR17 | 24 | - | - |
| 17. Jun (RK) | 25 | Dr. Lars Büttner | Laser Safety & Hazardous Substances Briefing (only for MST members) |
| 24. June | 26 | - | - <i>China</i> - |
| 28. June | 26 | Johanna Hoppe | US-based deep-learning assisted tracking of micro-robots <i>(intermediate presentation DA (R.N.,ZD) and test presentation</i> |
| 01. July | 27 | Jonas Kreissl John Böhm | Development and validation of software framework for modelling medical robots <i>(Intermediate Report, external DA Deveritec, Supervisor TG)</i> Digital optical phase conjugation based on second harmonic generation for application in tissue <i>(Intermediate Report, NK)</i> |
| 03. July | 27 | - | - |
| 08. July | 28 | Emil Mahnke (PoL) Laura Daniela Zamudio Chavez (PoL), Varvara Kramkova (PoL) | Optical diffractive neural network for multimode fiber (Oberseminar defense, QZ) Two-Photon Microscopy (Oberseminar defense, KS) |
| 15. July | 29 | - | -no show (vacation) |
| 22. July | 30 | Julius Wappler (MT), Camilo Jose Zapata Segura (Physik) | Software-based Correction of three-dimensional microscopical imaging through fluctuating water-air interfaces (Oberseminar defense, CB) |
| 2. August | | ? | |

External lecturers are shown in bold, in green are checks and in red are changes. Attention: The seminar plan can be subject to short-term changes, see Internet. The slides should be written in English. The lectures can be presented either in German or English (save the slides in the intranet). Organization: Dr. L. Büttner, BAR 28, Tel. 463-35314

Structure of the talks: 1) Scientific Question; 2) State of the art / literature survey; 3) Problem / Hurdles; 4) Hypotheses / Methods / Advantages and Disadvantages; 5) Transfer to real-world applications / Requirement for implementation in applications; 6) Vision