

SIMIS Seminar series on Quantum computing, Quantum simulation and Strongly-correlated systems**Prof. René Meyer**

Julius-Maximilians-Universität Würzburg, Germany

“Symmetry-Resolved Entanglement in AdS & BCFT”**Abstract**

I will discuss recent new examples providing new links between quantum information, holography and quantum gravity. I will first introduce a refinement of the usual entanglement entropy for theories with global conserved charges, the so-called symmetry resolved entanglement entropy, and discuss its implementation in AdS3/CFT2 (2012.11274, 2108.09210). I will in particular discuss the structure of entanglement in different charge sectors, which turns out trivial in theories with U(1) Kac-Moody symmetry. This property is called equipartition of entanglement. I will then discuss how W_3 symmetric CFTs (2202.11111) break this equipartition property. Finally, I will present recent work (2212.09767) which employs boundary conformal field theory techniques to obtain exact results for the symmetry-resolved entanglement and in particular for the equipartition property in U(1) Kac-Moody symmetric CFTs.

Biography of the speaker

Professor René Meyer received his Ph.D. from LMU Munich, in 2009. He conducted postdoctoral research at the University of Crete (2009-12), IPMU (2012-15) and Stony Brook U. (2016-16). Since 2016, he has been working at Julius-Maximilians-Universität Würzburg (Germany). His research primarily focuses on high-energy physics, AdS/CFT correspondence, string theory, and quantum information theory.

Date and Place: February 28th 2025, 16:00h-17:00h. Room: 1410. Send comments or questions to: Hamed Adami (Host) hadami@simis.cn or Miguel Tierz (Seminar organizer) to tierz@simis.cn