Georg H. Endress Research Seminar Announcement

Speaker: **Davies Bethany (Bruder)**

Date: **Wednesday, April 22, 2026, 12:00 pm (s.t.)**

Location: **University of Freiburg, SR I, Physics-High-Rise Building**

Title: **Fast entanglement distribution in quantum networks via adaptive generation**

Protocols for distributing entanglement over long distances typically assume that the generation parameters, corresponding to the entanglement generation success probability and fidelity, take a constant value. However, in many physical entanglement generation schemes, it is possible to vary these parameters. In this seminar, we consider two important scenarios in which the generation parameters are varied adaptively to improve entanglement distribution. Firstly, we consider the generation of entanglement packets, where multiple high-quality entangled states are present between two distant quantum processors. In the near-term parameter regimes explored, our adaptive policies provide an improvement of as much as a factor of twenty in the entanglement packet distribution rate. Secondly, we explore the application of heuristic policies for adaptive generation to a quantum repeater chain.