

Workshop Quantum Foundations. The physics of "what happens" and the measurement problem

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Progress at LUMI: the Long Baseline Universal Matter-Wave Interferometer

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Molecular interferometry has evolved into a rich field that addresses topics ranging from precise metrology to fundamental quantum properties. At LUMI we exploit a Kapitza-Dirac-Talbot-Lau interferometer scheme with a one-meter grating separation. We aim to detect interference at a mass scale beyond 100,000 amu, as well as to investigate massive and complex biomolecules. In this talk, I will present the current status of the experiment as well as some of the challenges inherent to a molecule interferometer of this scale. I will also discuss the outlook of the experiment, and the bounds it can place on certain spontaneous collapse models.

Presenter: FEIN, Yaakov (University of Vienna)