# Probabilistic Operator Algebra Seminar

Organizer: Dan-Virgil Voiculescu

March 13     **Magdalena Musat**, Copenhagen University

Title: *Infinite dimensional phenomena in the analysis of Quantum Information Theory*

    Factorizable quantum channels, introduced by C. Anantharaman-Delaroche within the framework of operator algebras, have proven to have important applications in the analysis of quantum information theory, leading also to reformulations of the Connes Embedding Problem. In recent work with M. Rordam, we show that (infinite dimensional) von Neumann algebras are, indeed, needed to describe such channels. The proof uses analysis of matrices of correlations arising from projections, respectively, unitaries, in tracial von Neumann algebras. We also establish a new view point on factorizable channels, leading to central questions in $C^*$-algebra theory.