

Probabilistic Operator Algebra Seminar

Organizer: Dan-Virgil Voiculescu

March 8 **Vladimir Peller**, Michigan State University, Lansing
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Title: *Triple operator integrals. Haagerup-like tensor products and Lipschitz type estimates for functions of pairs of non commuting self-adjoint operators.*

I am going to consider several approaches to define triple operator integrals. It turns out that for purposes of perturbation theory it is important to consider triple operator integrals whose integrands belong to new tensor products of L^∞ spaces. We call such tensor products Haagerup-like type tensor products of the first and of the second type. We study Schatten–von Neumann properties of such triple operator integrals and apply these results to Lipschitz type estimates for functions $f(A, B)$ of noncommuting self-adjoint operators in Schatten–von Neumann norms. We also apply our estimates to extend the Helton–Howe trace formula for functions of almost commuting self-adjoint operators.