

INSTITUTUL DE MATEMATICĂ "SIMION STOILOW" AL ACADEMIEI ROMÂNE

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*A family of deformations that connects Higgs
bundles and opers*

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IMAR, Hall 306

Abstract: The talk begins with an introduction to a general background of Higgs bundles and opers (holomorphic connections) on a compact Riemann surface. Then in the second part, a family of deformations of vector bundles and Deligne connections will be concretely constructed for the group $SL(N)$, which surprisingly interpolates Higgs bundles and opers. These deformation families are known as "quantum curves" in the physics literature, and are also related to non-Abelian Hodge theory. If time permits, the algebraic geometry aspect of "quantization" will be explained. The talk is based on numerous joint papers with Dr. Olivia Dumitrescu.