



A Non-Profit Association of a Learned Society

International Society of Nonlinear Mathematical Physics

isnmp.de

A Talk at the 2nd ISNMP Conference

Bad Ems, 28 June to 4 July 2026

Regular Session:

Speaker: S. Anco (Brock University, Canada)

Title: *Integrable systems on AKNS Lie algebras*

Abstract: This talk presents a broad generalization of the well-known AKNS approach to integrable systems. The generalization involves replacing the AKNS matrix Lax pair in $sl(2, C)$ by a two-parameter family of Lax pairs in an arbitrary semi-simple Lie algebra. A hierarchy of generalized Fordy-Kulish flows are obtained, along with their recursion operator and bi-Hamiltonian structure. The parameters consist of any two commuting elements in the Lie algebra. This setting unifies many known results and provides new integrable systems depending on the parameters in the general Lax pair.