

Miniworkshop “Invariants and Integrable Systems”

University of Antwerp, Belgium

June 19-20, 2026

Hamiltonian monodromy via spectral Lax pairs

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Hamiltonian monodromy is the simplest topological obstruction to the triviality of Liouville torus fibrations arising in completely integrable Hamiltonian systems. A spectral Lax pair provides a matrix representation of the Hamiltonian dynamics.

In this talk, I will revisit some geometric aspects of integrable systems and explain how the spectral Lax pair of a two-degree-of-freedom system admitting a Hamiltonian S^1 -action naturally gives rise to a Riemann surface. I will then show that the monodromy matrix can be recovered from the residue of a meromorphic 1-form on this surface.