PERIODS FOR IRREGULAR SINGULAR CONNECTIONS ON SURFACES

Marco Hien (University of Regensburg)

Given an irregular singular connection on a complex surface, we construct a duality pairing between its algebraic de Rham cohomology and certain singular homology groups in terms of period integrals (assuming a conjecture of Claude Sabbah on the formal structure of such connections) generalizing one-dimensional constructions of Bloch and Esnault.