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L^2-invariants of vortex moduli

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In this talk, I will describe joint work with M. Boekstedt and C. Wegner aiming at uncovering fundamental features of $N = (2, 2)$ supersymmetric quantum mechanics on moduli spaces of the Abelian vortex equations on compact Riemann surfaces for (Hamiltonian) toric targets. Our main focus is on the L^2-Betti numbers of the moduli spaces, which are complex manifolds carrying interesting Kaehler metrics. I shall discuss simple examples where these invariants have been calculated or conjectured by us, for both linear and nonlinear target actions.
