1005-58-128   **Matthias Lesch*** (`lesch@mi.uni-koeln.de`), Mathematisches Institut, Weyertal 86–90, 50931 Koeln, Germany. *The Calderon projector for the Hessian of the perturbed Chern-Simons function on a 3-manifold with boundary.*

The Morse theory of the Chern–Simons function leads to the construction of topological invariants, notably Taubes' construction of the Casson invariant and Floer's instanton homology. To obtain a Morse function the Chern–Simons functional has to be suitably perturbed. The Hessian then is a perturbation of the the odd signature operator by a nonlocal bounded operator.

In view of Heegard decompositions one also has to deal with this perturbed operator on manifolds with boundary. In my talk I will discuss the Calderon projector of the perturbed odd signature operator on a 3-manifold and point to possible applications.

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