

Tobias Lamm Conservation laws for fourth order systems in four dimensions

TIME:

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LOCATION:

reie Universität Berlin - Fachbereich Mathematik und Informatik Arnimallee 2-6, 14195 Berlin-Dahlem (Raum 031)

In the first part of this talk I will briefly review the recent result of Tristan Riviere on the existence of a conservation law for weak solutions of the Euler-Lagrange equation of conformally invariant variational integrals in two dimensions. I will then show how we can adapt these arguments to show the existence of a conservation law for fourth order systems, including biharmonic maps into general target manifolds, in four dimensions. With the help of this conservation law I will then prove the continuity of weak solutions of these systems. If time permits I will also indicate how one can use this conservation law to prove the existence of a unique weak solution of the biharmonic map flow in the energy space. This is a joint work with Tristan Riviere (ETH Zuerich).