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# Oberseminar Analysis und Theoretische Physik

## Dr. Nils Waterstraat

Politecnico di Torino

### A family index theorem for periodic Hamiltonian systems and bifurcation

We introduce an index theorem for families of linear periodic Hamiltonian systems, which is reminiscent of the Atiyah-Singer index theorem for selfadjoint elliptic operators. For the special case of one-parameter families, we compare our theorem with a classical result of Salamon and Zehnder. Finally, we use the index theorem to study bifurcation of branches of periodic solutions for families of nonlinear Hamiltonian systems.

**Dienstag, 7.5.2013, 15:00 Uhr, Raum g005  
Hauptgebäude der Leibniz Universität**

Dazu laden herzlich ein:  
Prof. Dr. Joachim Escher  
Prof. Dr. Olaf Lechtenfeld  
Prof. Dr. Elmar Schrohe  
Prof. Dr. Christoph Walker