



universität  
wien



## DK Seminar

May 11, 2016, 14:15 - 15:00  
Vienna University of Technology,  
Freihaus, green area, 4th floor, 101C

**Greg Pavliotis**

Imperial College London

### Spectral theory for hypoelliptic quadratic systems and applications

In this talk I will present some recent results on the spectral theory for general quadratic operators, i.e. non-selfadjoint differential operators with complex-valued quadratic symbols. I will then present applications of these results to the study of the problem of convergence to equilibrium for the generalised Langevin equation and related models. This is joint work with Michela Ottobre and Karel Pravda-Starov.

- (1) M. Ottobre, G.A. Pavliotis, K. Pravda-Starov, Some remarks on degenerate hypoelliptic Ornstein-Uhlenbeck operators, *J. Math. Analysis Appl.* 429(2), pp. 676-712 (2015)
- (2) M. Ottobre, G.A. Pavliotis, K. Pravda-Starov, Exponential Return to Equilibrium for Hypoelliptic Quadratic Systems, *J. Func. Analysis* 262(9) pp. 4000-4039 (2012).
- (3) M. Ottobre, G.A. Pavliotis, Asymptotic Analysis for the Generalized Langevin Equation, *Nonlinearity*, 24 (2011) 1629-1653.