

**Johann Radon Institute for  
Computational and Applied Mathematics  
der  
Österreichischen Akademie der Wissenschaften**

# **Group Seminar**

Group: Symbolic Computation

Tuesday 10. 05. 2011

14:00

room: AS50

## **Clemens Pechstein**

JKU

“Poincare's Inequality - Geometric and Analytic Connections”

Poincare's inequality allows to estimate the L2 norm of a function over a domain by a constant factor times the L2 norm of its gradient, provided that the function has a vanishing mean value. The constant factor is related to the second eigenvalue of the Laplace operator on the domain and it is difficult to be determined.

In this talk, I will review results by Maz'ya and John which relate the Poincare constant to geometric quantities associated to the domain. Also, I would like to present results by Rob Scheichl and myself that allow to estimate the Poincare constant of domains built from finite element meshes.