# Erwin Schrödinger Lecture

**Tuesday, December 13, 2011 - 5 p.m.**

**Boltzmann Lecture Hall, ESI, Boltzmanngasse 9, Vienna**

## Martin R. Bridson (University of Oxford):

## Finitely presented groups: geometry, decision problems, finite quotients, and monsters

*The symmetries (automorphisms) of any mathematical object form a group, and arbitrary degrees of complexity can be encoded into finite group-presentations. So what can we say about the universe of all finitely presented groups; what flavours of mathematics should we use to organise and explore it; what monsters will we find; and can we encode arbitrarily monstrous behaviour into the subgroups of familiar groups such as SL(n,Z)? What can one tell about a finitely presented group from its finite quotients?*

*In this talk I'll describe some of the major themes in the modern study of infinite groups, I'll sketch the universe of finitely presented groups, and then I'll present recent results concerning the last of the above questions.*

**Martin R. Bridson** is Whitehead Professor of Pure Mathematics at the University of Oxford.

The Erwin Schrödinger Lectures are directed towards a general audience of mathematicians and physicists. In particular it is an intention of theses lectures to inform non-specalists and graduate students about recent developments and results in some area of mathematics or mathematical physics.

The lecture will be followed by an informal reception, in the spirit of Advent.