# Simons Lecture Series

## Prof. Catherine Meusburger

### U Erlangen

# Introduction to Poisson Lie-groups

**I Monday, March 27, 2017**
**II Tuesday, March 28, 2017**
**III Wednesday, March 29, 2017**
**IV Friday, March 31, 2017**

**at 15:15 h**

**ESI, Boltzmann Lecture Hall**

**Abstract:** We generalise the notion of a lattice gauge theory with values in a group to Hopf algebra valued lattice gauge theories and show that a Kitaev lattice model for a finite-dimensional semisimple Hopf algebra H is equivalent to a Hopf algebra gauge theory for the Drinfeld double D(H). This shows in particular that Kitaev models are a special case of combinatorial quantisation of Chern-Simons theory introduced by Alekseev, Grosse, Schomerus und Buffenoir and Roche. This can be viewed as an analogue of the relation between Turaev-Viro and Reshetikhin-Turaev TQFTs and explicitly relates Kitaev models to the quantisation of moduli spaces of flat connections on surfaces.

N. Carqueville

March 16, 2017