

## ScotCats, 29<sup>th</sup> November 2013

The Eighth Scottish Category Theory Seminar was held on the afternoon of 29th November 2013 at the International Centre for Mathematical Sciences in Edinburgh, organised by Ales Simpson (University of Edinburgh, Informatics) and Tom Leinster (University of Edinburgh Maths). The meeting was based around an implicit theme of addressing category-theoretic methods in quantum theory and probability theory, from both physical and computational perspectives. There were 4 talks.

14.00-15.00

Invited speaker: Urs Schreiber (Radboud University Nijmegen)  
Higher toposes of laws of motion

15.00-15.30

Vincent Danos (University of Edinburgh)  
Conditional expectation as a functor

16.00-16.30

Ross Duncan (University of Strathclyde)  
Quantum computing in (almost) any category:  
an introduction to the ZX-calculus

16.30-17.30

Invited speaker: Bart Jacobs (Radboud University Nijmegen)  
Program semantics, according to Heisenberg and to Schroedinger

The meeting was funded by a grant from the Glasgow Mathematical Journal Trust, together with SICSA funding from the Complex Systems Engineering and Modelling and Abstraction themes. SICSA funding was requested, in particular, to support the visit of Prof. Bart Jacobs, a very well known computer scientist from the Netherlands, and an excellent speaker. At the meeting, Jacobs gave an outstanding blackboard talk, presenting new and still unpublished work that unites perspectives from programming language semantics, probability theory and quantum theory.