

The Joint Über-Seminar

discussion of research topics for young mathematicians and physicists

20 July 2015

14:00-17:00

in the seminar room 31.00.017

Thorsten Reichert

JMU Würzburg

Theories of Things and Stuff

Starting with a rather philosophical discussion of incompatibilities between Quantum Theory and General Relativity as well as the role of real numbers in physics, we will motivate and introduce the construction of a very broad framework for physical theories using Topos theory (original work from C. Isham, M. Döring and others). On the way there we will pick up and explain necessary concepts from category theory, mainly through very simple examples. We will finish the abstract part by displaying some surprising results from Topos theory.

If time permits, the incorporation of Quantum Mechanics into this framework will be sketched briefly.