

# Topology Seminar

## André Henriques

of University of Utrecht will be speaking on

# Progress report on the construction of TMF

on February 5 at 4:30 in  
MIT Room 2-131

Roughly ten years ago, Stephan Stolz and Peter Teichner have set up a detailed plan for constructing TMF geometrically. Unfortunately, their idea of definition is still incomplete. A couple of months ago, I had an idea (which fits into the Stolz-Teichner program) about which I am quite excited: There should be a universal CFT, which I'll call  $U$ . The CFT  $U$  should bear with respect to other CFTs a relationship that is analogous to the relationship that an infinite dimensional Hilbert space bears with respect to other finite dimensional vector spaces. Moreover, there should exist a property of quantum fields of  $U$ , which I'll call 'Fredholm' such that the space of Fredholm quantum fields of  $U$  is a classifying space for the cohomology theory TMF. I'll explain what the theory  $U$  is, and what it means for a quantum field to be 'Fredholm'. Disclaimer: this is all very speculative, and I don't think that, in its current form, this will yield TMF.