

SCMS Seminar



INVARIANTS OF THE SPECIAL ORTHOGONAL GROUP AND AN ENHANCED BRAUER CATEGORY

Speaker: Prof. Ruibin Zhang

University of Sydney

Time: 16:00 -17:00 p.m., Wednesday, April 19th, 2017

Venue: Room 2001, East Guanghua Tower (Main), Fudan University

Abstract:

We define an enhanced Brauer category $\text{wt}\text{-CB}(m)$ by adding a single generator to the usual Brauer category $\text{CB}(m)$, together with four relations. We then prove that our category $\text{wt}\text{-CB}(m)$ is actually equivalent to the category of representations of SO_m generated by the natural representation. The FFT for SO_m amounts to the surjectivity of a certain functor CF on Hom spaces, while the Second Fundamental Theorem for SO_m says simply that CF is injective on Hom spaces. This theorem provides a diagrammatic means of computing the dimensions of spaces of homomorphisms between tensor modules for SO_m . This is joint work with Gus Lehrer.