Seminar

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From Dualities to Diagrams

Wednesday, May 13, 2015

at 14:00 h

ESI, Schrödinger Lecture Hall

Abstract: The Temperley-Lieb algebra T Ld has its origin in the study of sl2-modules: Rumer, Teller and Weyl showed (more or less) already in the 30ties that T Ld can be seen as a diagrammatic realization of the representation category of sl2-modules - providing a topological (and fun!) tool to study the latter. In this talk I try to explain how one can proof such a realization. Our main tool is a machine that takes dualities and produces diagrammatic categories. In particular, we show explicitly how this machine works if one feeds it with q-Howe duality which produces diagrammatic presentations of categories of sln-modules akin to the Temperley-Lieb calculus. As an application, I give a diagrammatic version of a symmetry of HOMFLY-PT polynomials. In principal, everything in this talk is amenable to categorification, but we have to stay in the uncategorified world for the moment.

Nils Carqueville

April 21, 2015