



Berlin
Mathematical
School

BMS Kovalevskaya Colloquium

Friday 18 May 2018 at 14:15

Tea & Cookies starting at 13:00

BMS Loft, Urania, An der Urania 17, 10787 Berlin

Christine Bessenrodt

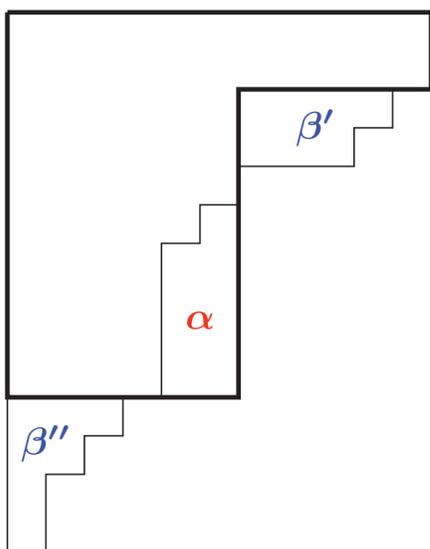
(Leibniz Universität Hannover)

Symmetries and tensor products

Symmetries of systems considered e.g. in combinatorics, geometry, algebra or quantum mechanics are often described via groups acting on complex vector spaces. A classical and central problem asks for the decomposition of the tensor product of such representations into its irreducible constituents. For more than a century, it has been an elusive goal to provide efficient combinatorial formulae for determining the Kronecker coefficients arising in this decomposition problem for the infinite family of symmetric groups.

In recent times, the study of the Kronecker coefficients has gained increased traction due to new connections to other areas and new benchmark problems. Kronecker coefficients play a role in quantum information theory; in geometric complexity theory they appear in new approaches to the P vs. NP problem; and unexpected applications have been found in number theory. This talk will highlight some of the fascinating facets of the theory, leading up to the developments in modern times.

Christine Bessenrodt has been a professor for algebra and number theory at Leibniz Universität Hannover since 2002, and is currently Director of the Institute for Algebra, Number Theory and Discrete Mathematics. Her research interests include the representation theory of finite groups and algebraic combinatorics. Bessenrodt earned her PhD at U Essen in 1980 and did her habilitation at U Duisburg in 1988. In 1989 she was awarded a Heisenberg Fellowship and became professor for algebra at U Magdeburg in 1993. She was an invited speaker at the ECM in Budapest in 1996. Currently, she is editor for the journals Algebra Colloquium and Séminaire Lotharingien de Combinatoire.



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