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Mês de: Outubro 2010

SEMINÁRIO DE LÓGICA MATEMÁTICA

Dia 21 de Outubro (quinta-feira), às 17h, na Sala A2-25

"Parallel composition of logic calculi with proofs as generalized 2-cells"

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(Joint work with Cristina Sernadas and João Rasga)

Abstract:

The practical significance of the problem of combining logics is widely recognized, since in applications the need for working with several calculi at the same time is the rule rather than the exception. The topic is also of interest on purely theoretical grounds, for establishing results about the combined logic that may be inherited from the component logics. Different techniques for combining logics have been reported in the literature. Fibring is the most general form of combination and our recent graphic-theoretic account makes it applicable to a wide class of logics, including substructural and non truth-functional logics. Capitalizing on the latest developments in the theory of fibring and inspired by parallel composition of processes, a novel mechanism for combining logics, subsuming fibring as a special case, was recently proposed by us at the semantic level. After a brief survey of the field and a summary of the graph-theoretic account of logics and their combinations, the talk addresses the parallel composition of Hilbert-style calculi, using generalized 2-categories. A proof of the conservative nature of free parallel composition of calculi is sketched, allowing the result for unconstrained fibring to follow as an immediate corollary. Some open problems are discussed at the end.

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