AVVISO DI SEMINARIO

Venerdì 23 Marzo 2007
alle ore 11.00
nella Sala Seminari del DISCo

Nadia Busi
University of Bologna, Italy

terrà un seminario dal titolo

Expressiveness issues in Bio-Inspired Calculi

Abstract:

Biological membranes play a fundamental role in the complex reactions which take place in cells of living organisms. The modeling and the analysis of biological systems, hence also of membranes and compartments, has recently attracted the interest of the process algebra research community.

Brane Calculi - recently introduced by L. Cardelli - are a family of process calculi based on a set of biologically inspired primitives for modeling the interactions of dynamically nested membranes. Two basic Brane Calculi have been proposed: the Phago/Exo/Pino (PEP) calculus, inspired by the biological operations of endocytosis and exocytosis, and the Mate/Bud/Drip (MBD) calculus, inspired by membrane fusion and fission. We present some results on the comparison of the expressiveness of the PEP and the MBD calculi, as well as of their deterministic fragments, w.r.t. their ability to perform computations. We also compare two different semantics for Brane Calculi (namely, the classical interleaving semantics and the maximal parallelism semantics typical of Paun's Membrane Systems) and their impact on the expressiveness.

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