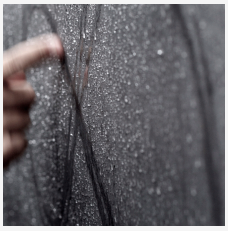

Groupe de recherche inter-universitaire de Montréal en histoire et en philosophie de la logique et des mathématiques

22 septembre 2011
10h30 - 11h30
Salle W-5215
Pavillon Thérèse-Casgrain
455 Boul. René-Lévesque

Olivia Caramello (Université de Cambridge)

The idea of bridge and its unifying role in science

Abstract: In the paper "The unification of Mathematics via Topos Theory" I introduced a new point of view on the concept of Grothendieck topos, namely the idea of a topos as a 'bridge' which can be effectively used for transferring information between distinct mathematical theories. The topos-theoretic techniques resulting from an implementation of this idea have already proved themselves to be very fruitful in Mathematics; indeed, they have generated a great number of non-trivial applications in distinct mathematical fields including Algebra, Topology, Algebraic Geometry, Model Theory and Proof Theory. On the other hand, one can further abstract from these methodologies to try to identify the real essence of the idea of 'bridge', and look for other incarnations of the concept both in Mathematics and in different scientific fields. It turns out that the idea of bridge is intimately tied to that of invariance, and that a suitable combination of these two concepts can play a unifying role in Science as well. In the talk I will begin by reviewing the philosophical principles underlying the unification methodologies and proceed to sketch the general idea of bridge; I will then consider the relationship between this concept and the idea of invariance, and discuss the organizing role of these two notions in Mathematics and Science in general. The analysis will be complemented by analogies with concepts in Linguistics, Physics and Biology.

Pour plus d'informations, contacter Gregory Lavers (Université Concordia), Mathieu Marion (UQAM), Jean-Pierre Marquis (Université de Montréal), Dirk Schlimm (Université McGill).
Ou consulter la page:
http://www.cs.mcgill.ca/~dirk/workshop

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