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Mathematics, Physics and Theoretical Computation

The relationship between theoretical physics and various branches of mathematics, ranging from group theory to mathematical analysis, etc. has had a long and fruitful history. Computation, on the other hand, is commonly relegated to what we are forced to do when we cannot find formal mathematical solutions. We wish to focus on Theoretical Computation (TC); something new that deals only with discrete space-time-state informational models. There are just a few laws that characterize such systems. What is quite new, and basically still unexplored, is the application of aspects of TC to theoretical physics. Part of the reason has to do with the immature and primitive state of this theory.

TC deals with directly modeling the microscopic temporal evolution of a system. Unlike mathematics, but similar to both the real world and a steam engine, TC lets us put the exact model into motion. This can always be done by running a TC emulation program in a computer. TC facilitates our ability to consider the informational aspects of physical processes along with the usual focus on energy, momentum, motion, charge, etc. Working with this theory has led to insights with respect to a number of areas of theoretical physics.

Mardi 20 mai 2008 à 15 heures

Salle André Berthelot, bât. 141

Le café sera servi 15 minutes avant

NB : La présentation d'une carte d'identité ou d'un passeport est exigée à l'entrée du centre. Tous les auditeurs extérieurs sont priés de prévenir à l'avance de leur visite Emilie Chancrin, tél. 01 69 08 23 50 (U.E. : délai de 24 h, hors U.E. : délai de 4 jours).