Seminar: "Geometry&Physics", DFT (IFIN-HH)
(Seminar Homepage) (Indico Page)

Location: IFIN-HH, DFT seminar room

Date: Monday, May 13, 2019, 11 AM

Title: **An artificial physics for an artificial chemistry**

Speaker: **Dr. Marius Buliga** (IMAR)

Abstract: "An artificial chemistry is understood as an asynchronous graph rewrite automaton, with graphs as molecules and graph rewrites as chemical reactions. The chemistry algorithm consists in random applications of graph rewrites, according to probabilities which depend on local chemical composition and possibly global variables which model space or geometry constraints. Behind chemistry there should be a physics, a model which explains the evolution of the global variables, graph rewrites and their probabilities. In this talk we show that a family of artificial chemistries admit a physics based on a principle of minimal information content of the deviation from hamiltonian evolution introduced in arXiv:1902.04598. Some of these chemistries are interesting from a computational point of view, for example chemlambda which uses interaction nets graph rewrites. The physics background turns such a chemistry into a toy model for molecular computers in the sense of arXiv:1811.04960."