

cfaed Colloquium

DATE: 27 September 2019

TIME: 11:55 am

LOCATION: TU Dresden, Barkhausen-Bau (BAR), Heinz-Schönfeld-Hörsaal
BAR I90, Georg-Schumann-Str. 13, 01187 Dresden

SPEAKER: **Dr. Till Korten**
B CUBE, TU Dresden



TITLE: ***"Molecules That Count - Prospects and Challenges of Network-Based Biocomputation"***

Abstract:

Many technologically and societally important mathematical problems are intractable for conventional, serial computers. Therefore, a significant need exists for parallel-computing approaches that are capable of solving such problems within reasonable time frames. Recently, we demonstrated a proof-of-principle for a parallel-computation system in which a given combinatorial problem is encoded into a graphical, modular network that is embedded in a nanofabricated planar device. The problem is then solved by a large number of independent biological agents, namely molecular-motor-propelled protein filaments, exploring the network in a highly parallel fashion. Notably, this approach uses orders of magnitude less energy than conventional computers, thus addressing issues related to power-consumption and heat-dissipation.