“Computational aspects of Gene Assembly in ciliates”

Abstract

The performance increase of conventional computation technics only lasts for a few more years, as semiconductor circuit density draws near to its physical limit. This fact enforces the search for alternative computation concepts with increasing interest. One direction concentrates on DNA and its possibilities in using systematic manipulation for computation.
Ciliates, a various group of about 8000 unicellular organisms, show an interesting behaviour. After cell division a reordering of DNA sequences takes place. This process called Gene Assembly came into focus as, completely understood, it could provide a natural mechanism for computation. Several attempts were made to formalize it. The talk gives a short introduction into the field and concentrates on the intermolecular model for Gene Assembly.