



Colloquium

The Institute Colloquium: Nucleus: A dynamics solver, from cloth to DNA strands

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Host:

In this talk I will present some research I have done in developing a unified dynamics solver for computer graphics. Currently many solvers are specialized for a given phenomenon such as fluid flow, cloth, rigid bodies, hair, etc. Having these different solvers interact is sometimes problematic. We propose to model all matter as a linked particle system having the topology of a simplicial complex. The dynamical complex evolves due to external forces like gravity and constraints such as collisions and internal deformations. We use a solution scheme that iteratively updates the velocities to achieve all constraints. Key to the stability of our system is to interleave the solve for the different constraints. The talk will cover the main ideas and ingredients of our solver and will be accompanied with live demonstrations. We will also show applications beyond the area of computer graphics. This includes physics-based shape design for architecture and nano-scale self-assembly of DNA strands and polypeptides

Monday, September 30, 2013 04:30pm - 05:30pm

Raiffeisen Lecture Hall, Central Building



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: <https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.