Mathematics and CS Seminar

Representations and applications of differential operators in geometry processing

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Geometry processing deals with the design of effective discrete methods for complex problems which appear in various areas of computational science and engineering. In practice, choosing a particular discretization machinery greatly affects the formulation of the problem and the analysis and design of its computational method. Consequently, methods may differ in practical aspects such as ease of implementation and preservation of geometric features due to the choice of discretization.
In this talk, I will argue that in some cases rephrasing a geometrical problem in terms of linear mappings between vector spaces (operators) is beneficial when devising and implementing a discrete method. I will present some of the tools we developed and their application to problems such as vector field design and simulation of incompressible flows and thin films. In addition, I will discuss the inverse problem of computing correspondences between scalar functions and its effective solution using our operator machinery.

Tuesday, May 9, 2017 11:00am - 12:00pm
Seminar room Ground floor / Office Bldg West (I21.EG.128)

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