

Announcement of a lecture course

V5E4 Selected Topics in Scientific Computing

Spaces of Shapes as Riemannian manifolds - from modeling to efficient computation

Prof. Dr. Martin Rumpf

SoSe 2015, No. 611510605, 2.0 SWS

Sekretariat:

Frau G. Sodoge-Stork

Postanschrift:

Endenicher Allee 60

53115 Bonn

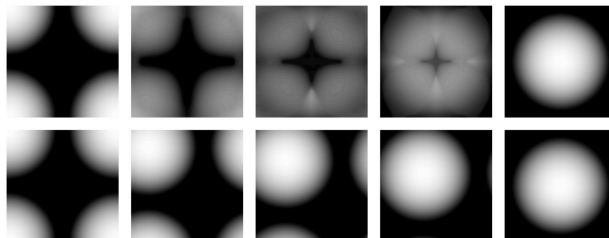
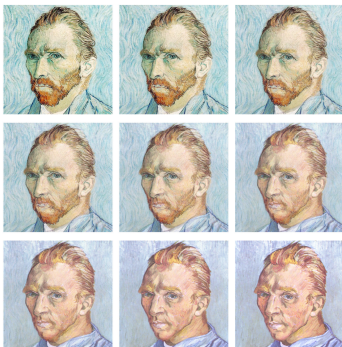
Tel.: 0228/73-2719

Fax: 0228/73-9015

martin.rumpf@ins.uni-bonn.de

www.ins.uni-bonn.de

07.04.2015



The lecture course will discuss the space of images and the space of curves or surfaces from the perspective of Riemannian geometry. Examples are the flow of diffeomorphism and the optimal transportation approach in imaging as well as the space of viscous rods in geometric modeling. The course will discuss the different underlying metric structures and will study the existence of shortest connecting paths. Furthermore, a variational time discretization will be introduced and the convergence to the continuous model will be investigated. Finally, appropriate space discretizations and effective numerical algorithms will be presented.

The course will be taught as a four hour course for the first half of the semester.

SR 2.040 Mathematik Zentrum

Tuesday 8 Uhr ct

Thursday 12 Uhr ct