TECHNISCHE UNIVERSITÄT WIEN
Institut für Computergraphik und Algorithmen
Arbeitsbereich für Computergraphik

OESTERREICHISCHE COMPUTER GESELLSCHAFT
AUSTRIAN COMPUTER SOCIETY

laden gemeinsam zum

GASTVORTRAG

Hans-Christian Hege
Zuse Institute Berlin (ZIB)

“Visualization of Unsharp Data - Roads to Sharp Formulations ”

Abstract:

In the past several attempts have been made to develop techniques for visualizing fuzzy spatial and spatio-temporal data. Most of these techniques are rather heuristic and just qualitative. In this talk I will discuss how uncertainty visualization can be put on a firm ground and can be made quantitative by building on established methods for representation, quantification and propagation of uncertainties. This will be illustrated on the example of iso-contours of a scalar field that is affected by uncertainties. For this - in a probabilistic formulation - fuzzy analogues of sharp iso-contours are defined and computed by employing a Monte-Carlo method. Furthermore, applications shall be discussed, like visualization of results from ensemble simulations in climate research.

Biography:

Hans-Christian Hege is head of the Visualization and Data Analysis Department at Zuse Institute Berlin (ZIB). After studying physics and mathematics, he performed research in computational physics and quantum field theory at Freie Universität Berlin (1984-1989). Then, he joined ZIB, initially as a scientific consultant for high-performance computing and then as head of the Scientific Visualization Department, which he started in 1991. His group performs research in visual data analysis and develops visualization software such as Amira and Biosphere3D. He is also the co-founder of Mental Images (1986), Indeed-Visual Concepts (1999) (now Visage Imaging), and Lenné3D (2005). He taught as a guest professor at Universitat Pompeu Fabra, Barcelona, and as honorary professor at the German Film School (University for Digital Media Production). His research interests include many branches in visual computing as well as applications in life sciences, natural sciences and engineering.

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