学术报告会

时间：**2012年10月18日(周四) 10:00-12:00**

地点：电院群楼**2-410**会议室

"Morphological Computation" -- Self-Organization, Embodiment, and Biological Inspiration

Prof. Rolf Pfeifer

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Abstract:
Robotics researchers increasingly agree that ideas from biology and self organization can strongly benefit the design of autonomous robots. While in classical robotics there is a clear distinction between the control and the to-be-controlled, in biological systems part of the functionality is incorporated into the morphological and material characteristics: the task of coping with impact in human walking. On the sensory side, the spatial arrangement of the sensors on the body provides information about the stimulus. Biological systems which are - with the exception of the skeleton providing structural support - largely soft and elastic (to varying degrees), capitalize on "morphological computation" by exploiting their morphological and material characteristics as well as processes of self-organization. These ideas play an essential role in the design of next-generation intelligent agents as in the recent field of "soft robotics".

Biography:
Prof. Rolf Pfeifer received his master's degree in physics and mathematics and his Ph.D. in computer science from the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland. He spent three years as a post-doctoral fellow at Carnegie-Mellon University and at Yale University in the US. Since 1987 he has been a professor of computer science at the Department of Informatics, University of Zurich, and director of the Artificial Intelligence Laboratory. He was visiting professor and research fellow at the Free University of Brussels, the MIT Artificial Intelligence Laboratory in Cambridge. Currently, he is the Deputy Director of the NCCR Robotics, the "National Competence Center for Research in Robotics" in Switzerland. His research interests are in the areas of embodiment, biorobotics, morphological computation, modular robotics, self-assembly and educational technology.