

9. PAULI KOLLOQUIUM

Das **Wolfgang Pauli Institut** ladet ein zum Vortrag von
Tim ROUGHGARDEN (Stanford)

Zeit: Freitag, 18. Dezember 2009, 14:15 – 16:00

Ort: Hörsaal 2 im UZA2, Althanstrasse / Nordbergstrasse

14.15 – 14.25 Uhr

„Introduction“ **Monika HENZINGER** (WPI c/o Fak. Informatik, U.Wien & EPFL)

14.25 – 15.15 Uhr

Tim ROUGHGARDEN (Stanford Univ. , Computer Science Department)

“Intrinsic Robustness of the Price of Anarchy”

15.15 – 16.00 Uhr

Coffee & Cake

Tim Roughgarden (Stanford Univ , Computer Science Department):

” Intrinsic Robustness of the Price of Anarchy”

Abstract: The price of anarchy, the most popular measure of the inefficiency of selfish behavior, assumes that players successfully reach some Nash equilibrium. We prove that for most of the classes of games in which the price of anarchy has been studied, results are "intrinsically robust" in the following sense: an upper bound on the worst-case price of anarchy for pure Nash equilibria *necessarily* implies the exact same worst-case upper bound for a much larger sets of outcomes, including mixed Nash equilibria, correlated equilibria, and sequences of outcomes generated by natural experimentation strategies (such as successive best responses or simultaneous regret-minimization). Byproducts of our work include several new results for the inefficiency of equilibria in congestion games.

Short Biography: *Tim Roughgarden* received his PhD from Cornell University in 2002 and joined the Stanford CS faculty in 2004. His research interests lie in theoretical computer science, especially its interfaces with game theory and networks. He wrote the book "Selfish Routing and the Price of Anarchy" (MIT Press, 2005) and co-edited the book "Algorithmic Game Theory", with Nisan, Tardos, and Vazirani (Cambridge, 2007). His significant awards include the 2002 ACM Doctoral Dissertation Award (Honorable Mention), the 2003 Tucker Prize, the 2003 INFORMS Optimization Prize for Young Researchers, speaking at the 2006 International Congress of Mathematicians, a 2007 PECASE Award, and the 2008 Shapley Lectureship of the Game Theory Society.