



Presents

Prof Raz Kupferman

Institute of Mathematics

The Hebrew University of Jerusalem

Thursday, Sept 11, 2008

Duncan Hall – Room 1070 - 2:30 p.m.

Reception to follow in Abercrombie B237

“Cracking the High-Weissenberg Number Problem”

Abstract: Since its early days in the early 1970, the field of computational rheology (the flow of complex fluids) has experienced a number of insurmountable stumbling blocks, notably, the high Weissenberg number problem (HWNP). It is a term coined to describe the breakdown of computations at a moderately high values of the elasticity parameter. In this lecture, Dr. Kupferman will report a number of recent advances in an effort to elucidate the HWNP, and describe some of the remaining problems.

ABOUT THE SPEAKER

Prof Kupferman's research interests are scientific computing, computational fluid dynamics, polymer physics and computational rheology, dimension reduction and stochastic modeling, statistical mechanics, pattern formation, bio-mathematics. He earned his Ph.D in Physics in 1995 from Tel-Aviv University. His thesis topic was *“Morphology, Coexistence and selection in interfacial pattern-formation”* and his advisor was Prof Eshel Ben-Jacob. He earned his M.Sc. in Physics (*Magna cum Laude*) and his B.Sc. in Physics and Computer Science (*Summa cum Laude*) from Tel-Aviv University. Dr. Kupferman did his post-doc research at Lawrence Berkeley Laboratory and UC Berkeley, and is the recipient of the 2003 Hebrew University Rector Prize for research excellence, the 1999-2002 Alon Fellowship, and the 1992-95 Buchman Fellowship for graduate study at Tel-Aviv University. He has published 52 scientific articles.