

An outline of

**SECOND EUROCONFERENCE AND
INTERNATIONAL SYMPOSIUM:
MATERIAL INSTABILITIES IN
DEFORMATION AND FRACTURE**

held in Thessaloniki, Greece, 31. August - 4. September 1997

The main goal of the Conference was to bring together researches from mechanics, material science and nonlinear physics to contribute to the topic of Material instabilities in deformation and fracture. All of participants had invited lectures, and young European and United States researches had brief presentations and posters. The meeting was a continuation of small interdisciplinary annual meetings organized by the Mechanics division of Aristotle University of Thessaloniki between 1991-1995 as an outgrowth of a major international conference held in Thessaloniki in August 1990, celebrating Aristotle's 23 centuries.

The Conference was open on Sunday August 31, by lecture of Nobel prize winner I. Prigogine, Brussels, Belgium: "The Dynamical basis of self organization". Prof Prigogine was not able to come and his co-worker I. Antoniou was presenter of his talk.

After that two lectures were given by Prof J.R. Rice from Harvard University, USA: "*Problems in crack and fault dynamics*" and "*Mode of shear rupture propagation; Enlarging crack versus self-healing slip pulse*". From USA, besides Prof. Rice there were: K. Valanis, A. Needleman, S. Nemat-Nasser, Z. Bazant, A. Rosakis and others. From Europe: J.R. Willis, A. Seeger, G. Maugin, H. Herman, A. Carpinteri etc. From Russia: L. Pitaevski, V. Panin, N. Morozov, Y. Mescheryakov and others. From Greece: E. Aifantis, D. Beskos, D. Panayiotounakos etc.

From Yugoslavia, three participants were invited: J. Jarić, T. Atanacković and D. Šumarac.

To my opinion the Conference was on the highest possible level, immediately after the one devoted to Aristotle's 23 centuries (which I was also attended), held at the same place in 1990. All participants gave tremendous contribution to it, but I have to say that presentations and discussions of Prof J.R. Rice made this conference so successful. The important step forward of this conference was also that mechanicians and physicists, from two points of view, discussed the same problem. Surprising for me was also the fact that large part of papers were in area of micro and nano-mechanics. This is probably the consequence of good facilities (large electron microscopes and large computers) which allow good experiments and numerical modeling on the level of atoms.

At the end of the Conference informal round table session was established. Authorities in this field: J.R. Rice, J. Li, A. Seeger, L. Pitaevskii, J. Willis, J. Jarić and G. Maugin have given their opinions about the Conference and future directions of research.

Up to now the book of Abstracts is published, but the Proceedings will be published later on.

At the time of Conference, Thessaloniki has been designated Cultural Capital of Europe for the year 1997.

Belgrade, Nov. 07, 1997

Prof. Dr D. Šumarac