Contribution ID: **57** Type: **not specified**

Computational science and new perspectives for the analysis of massive data sets

Tuesday, 29 November 2011 11:00 (30 minutes)

The last decade has witnessed an exponential growth in both size and quality of scientific data sets. The exploitation of the useful information in these Massive Data Sets (MDS) has triggered the birth of new disciplines, the so called X-informatics, which are at the crossroads of domain expertise, computer science, mathematics and statistics. X-informatics is being recognized as the "fourth leg" (after experiment, theory and simulation) of the scientific methodology. The various X-informatics (where the X stays for bio, astro, geo, chem, etc) share a common background of problems and methods which, in the near future, will necessarily become a crucial part of the cultural background of any scientist. The talk will present a short summary of these problems and methods and will focus on the specific problems (interoperability, scalability, data access, visualization, etc.) posed by the use of innovative data mining methodologies

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Session Classification: Techniques of Analysis of Massive Database