



 [Print this Page for Your Records](#)

[Close Window](#)

Control/Tracking Number: 219-RC-1701-AAS

Activity: Research Contributed

Current Date/Time: 10/5/2011 5:35:34 PM

DATA Mining and Exploration (DAME): New Tools for Knowledge Discovery in Astronomy

Author Block: Stanislav G. Djorgovski¹, G. Longo², M. Brescia³, C. Donalek¹, S. Cavuoti², M. Paolillo², R. D'Abrusco⁴, O. Laurino⁴, A. Mahabal¹, M. Graham¹

¹Caltech, ²Univ. Federico II, Napoli, Italy, ³Osservatorio Astronomico di Capodimonte, Italy, ⁴Harvard-Smithsonian Center for Astrophysics.

Abstract:

The exponential growth of data volumes and complexity in astronomy, as in almost every other field of science, presents both great opportunities and great challenges for an effective knowledge discovery. We describe DATA Mining and Exploration (DAME), a general purpose, Web-based, distributed infrastructure for an effective data mining in massive and complex data sets. DAME includes machine-learning tools such as a variety of Artificial Neural Networks, Support Vector Machines, Self-Organizing Maps, Bayesian Networks, etc., for tasks such as an automated classification or regression fitting in multi-dimensional parameter spaces, etc. DAME also provides workspaces and grid access mechanisms, as well as an extensive documentation and user guides. We illustrate DAME applications on several scientific examples. DAME represents a new generation of astroinformatics tools that will become increasingly important for the data-rich astronomy in the 21st century.

Plain-Language Abstract:

We present DAME, a novel toolkit for data mining and knowledge discovery in massive and complex data sets. Such tools will become increasingly important, as the exponential data growth continues.

Speaker Agreement (Complete):

: I have read and accept this agreement

Linking Groups (Complete): None selected

Category (Complete): 41. Computation, Data Handling, Image Analysis

Preplanned Sessions (Complete):

Preplanned Session: Cyber-Discovery and Science for the Decade (Lazio, Accepting Contributed Posters Only)

Presentation Preference (Complete): Poster

Additional Info (Complete):

Has this work been submitted in any form to a journal or preprint server, or if you expect it to be submitted between now and the meeting?: Yes

If you selected yes, to what publication(s) and/or preprint server(s) has this work been (or will this work be) submitted? : Springer Series on Astrostatistics

Is this your first presentation at an AAS Meeting?: No

I am willing to serve as a Chair: Yes

(1) Area of Expertise: 41. Computation, Data Handling, Image Analysis

(2) Area of Expertise: 40. Surveys and Large Programs

(3) Area of Expertise: 32. Cosmology

I am willing to serve as a poster Judge: No

Status: Complete

American Astronomical Society

2000 Florida Ave., NW

Suite 400

Washington, DC 20009

FOR TECHNICAL SUPPORT:

217-398-1792 (Monday through Friday 9:00 am-5:00 pm Central Standard Time)

or OASIS Helpdesk

[Leave OASIS Feedback](#)

Powered by OASIS, The Online Abstract Submission and Invitation System SM

© 1996 - 2011 Coe-Truman Technologies, Inc. All rights reserved.

