

21ST INTERNATIONAL WORKSHOP ON PRINCIPLES OF DIAGNOSIS (DX-10)

Oct 13th -16th, 2010, Portland, Oregon, USA



Hosted by



Submission Deadline: June 15th, 2010

Workshop Website: <http://www.phmsociety.org/events/workshop/dx/10>

Workshop email: dx10-oc@phmsociety.org

DX-10

The International Workshop on Principles of Diagnosis is an annual event that started in 1989 rooted in the Artificial Intelligence (AI) community. Papers presented at the workshop cover a variety of theories, principles, and computational techniques for diagnosis, monitoring, testing, reconfiguration, fault-adaptive control, and repair of complex systems. Applications of these theories, principles, and techniques to industry related disciplines and other real world problems are also important topics of the workshop.

DX-10 will be hosted jointly by the [Palo Alto Research Center – PARC](#), Palo Alto, California, USA and [NASA Ames Research Center](#), Moffett Field, California, USA. Like the [previous workshops in this series](#), DX-10 encourages the interactions and the exchange of theories, techniques, applications, and experiences amongst researchers and practitioners from diverse backgrounds - Artificial Intelligence, Control Theory, Systems Engineering, Software Engineering and other related areas - who share an interest in different aspects of diagnosis, and the related fields of testing, reconfiguration, maintenance, prognosis, and fault-adaptive control. DX is a lively forum that has traditionally adopted a single track program with a limited number of participants in order to promote detailed technical exchange and debate while at the same time making efforts to develop synergistic approaches to solving real world problems.

This year DX will be co-located with [Annual Conference of the PHM Society, PHM 2010](#). The interaction between the two events will consist of joint sessions on October 13th and 14th. DX-10 will also host sessions for the [Second International Diagnostic Competition \(DXC '10\)](#).

Preliminary Call for Papers

We welcome papers on topics that are related but not limited to the following:

- Formal theories and computational methods for diagnosis, that include monitoring, detection and isolation, testing, repair and therapy, reconfiguration, fault tolerance, diagnosability analysis, and other related topics.
- Modeling for diagnosis that includes symbolic, numeric, discrete, discrete event, continuous, hybrid, probabilistic, functional, behavioral, qualitative, abstractions, and approximation methods. Effective modeling approaches for large systems are of particular relevance.
- Computational issues that address combinatorial explosion, use of structural and hierarchical knowledge, focusing strategies, resource-bounded reasoning, real time analysis, and other related topics.
- Diagnosis processes that include strategies for measurement selection, sensor placement, test actions design, active testing, embedded diagnosis systems, preventive diagnosis, fault tolerance strategies, fault-adaptive control, and distributed diagnosis.
- Bridge between DX (AI-based diagnosis methods) and other diagnosis methodologies: FDI, control-based techniques, statistical and probabilistic methods, design, model checking, machine learning, non-monotonic reasoning, planning, execution, real-time languages, software verification and validation, debugging, and hardware testing.
- Real-world applications and integrated systems in a wide range of fields including transportation systems, space and aeronautics, process industries, medical domains, and bio-informatics. Case studies of tech transfer that resulted in success or failure are especially welcome.

Paper Formats and Submission

We are organizing DX-10 under the auspices of the [PHM Society](#). The due date for paper submission is June 15th (after the PHM deadline). For submission and reviewing we will use the PHM web site. Word and Latex templates for paper formats can be obtained from the DX-10 website.

Location

The workshop will be held at [Portland Hilton and Executive Tower](#), 921 SW Sixth Ave, Portland, Oregon, USA. The workshop will be centrally located in the bustling downtown district with many unique restaurants, breweries and wine bars, in walking distance, as well as world class museums and galleries. Outdoor destinations to the Mt. Hood area, Columbia River Gorge, or Multnomah Falls are also available for those looking for a more adventurous stay.

Travel suggestions, Registration, Hotel will all be handled through PHM.

Co-Location with PHM 2010

DX-10 will be held in conjunction with the [Annual Conference of the PHM Society, PHM 2010](#). The Annual Conference of the PHM Society intends to bring together the global community of PHM experts

from industry, academia, and government in diverse application areas such as energy, aerospace, transportation, automotive, and industrial automation. PHM 2010 will be held from October 10th to 14th. October 13th and 14th will be used for joint sessions of PHM and DX.

DX Competition 2010 - DXC '10

Part of the workshop program will be devoted to the Second International Diagnostic Competition (DXC'10), where winners and contributions to the competition will be discussed.

DXC'10 is jointly developed by NASA Ames Research Center and PARC with the objectives of accelerating research in theories, principles, and computational techniques for monitoring and diagnosis of complex systems, encouraging the development of software platforms that promise more rapid, accessible, and effective maturation of diagnostic technologies, and providing a forum that can be utilized by algorithm developers to test and validate their technologies.

For more information, posters, and announcements, see the [diagnostic competition website](#).

Organizing Committee

Name	Affiliation	Designation
Johan de Kleer	PARC	Chair
Scott Poll	NASA Ames	Co-Chair
Alexander Feldman	TU Delft	Organizing Committee
Lukas Kuhn	PARC / TUM	Organizing Committee
Sriram Narasimhan	UC Santa Cruz @ NASA	Organizing Committee
Tolga Kurtoglu	MCT @ NASA	Organizing Committee
Matthew Daigle	UC Santa Cruz @ NASA	Organizing Committee
Indranil Roychoudhury	SGT @ NASA	Organizing Committee
David Garcia	SGT @ NASA	Organizing Committee

Program Committee

Name	Affiliation
Gautam Biswas	Vanderbilt University, USA
Luca Console	University of Torino, Italy
Marie-Odile Cordier	University of Rennes1/IRISA, France
Philippe Dague	University of Paris South, France
Oskar Dressler	OCC'M Software GmbH, Germany
Erik Frisk	Linköping University, Sweden
Alban Grastien	NICTA and Australian National University, Australia
Arjan van Gemund	Delft University of Technology, Netherlands
Meir Kalech	Ben-Gurion University of the Negev, Israel
Mattias Krysander	Linköping University, Sweden
Pieter Mosterman	The MathWorks, Inc., USA
Mattias Nyberg	Scania CV Sodertalje, Sweden
Greg Provan	University College Cork, Ireland
Belarmino Pulido	University de Valladolid, Spain

Martin Sachenbacher	Technical University of Munich, Germany
Peter Struss	Technical University of Munich, Germany
Markus Stumptner	University of South Australia, Australia
Louise Trave-Massuyes	LAAS-CNRS, France
Franz Wotawa	Graz University of Technology, Austria
Marina Zanella	University of Brescia, Italy

Important dates

Event	Date
Paper submission deadline	June 15 th , 2010
Notification of acceptance and rejections	August 15 th , 2010
Preliminary program announcement	August 22 nd , 2010
Deadline for registration	August 29 th , 2010
Deadline for final papers	September 15 th , 2010
Workshop	October 13 th -16 th , 2010