

# IEEE - PROGNOSTICS & SYSTEM HEALTH MANAGEMENT CONFERENCE 2010 (PHM-2010 Macau)



## Call for Papers

12-14 January 2010

University of Macau, Macau, P.R. China



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### Introduction

Prognostics is the process of predicting the future "effective reliability" of a product by assessing the extent of deviation or degradation of a product from its expected normal operating conditions. Health monitoring is the process of measuring and recording the extent of deviation and degradation from a normal operating condition. All the leading companies in the world are looking at the implementation of PHM in their products and systems today.

The PHM-2010 Macau conference is the first of its kind in Asia to promote the realization and application of PHM as a key enabler for growth for a broad range of industries in the Asia Pacific region. The conference will bring together experts and leaders from industry, government organizations, and leading research centers who will share their methods and solutions for the application of PHM. This event will be an important platform for exchange and networking among leading players in the emerging PHM field, especially in the Asia Pacific region.

### Abstracts and Papers

Researchers and participants from academia, industry and government organizations are invited to submit papers on the following topics:

Principles	Methods	Results
<ul style="list-style-type: none"> <li>Sensors</li> <li>Structural sensing</li> <li>Health management system design and engineering</li> <li>Modeling and simulation</li> <li>Physics of failure</li> </ul>	<ul style="list-style-type: none"> <li>Data-driven methods for anomaly detection, diagnosis, and prognosis</li> <li>Model-based methods for fault detection, diagnostics, and prognosis</li> <li>Automated reconfiguration</li> <li>Verification, validation, and maturation</li> <li>Component-level PHM</li> <li>PHM for electronics</li> <li>Structural health management</li> </ul>	<ul style="list-style-type: none"> <li>Innovation applications</li> <li>Industrial applications</li> <li>Informed logistics</li> <li>Lessons learned from PHM system design and Integration</li> <li>Standards and methodologies</li> <li>Systems and platform applications</li> <li>Component-level prognostic results</li> </ul>

September 30, 2009  
October 10, 2009  
November 15, 2009

Abstract Submission  
Abstract Acceptance  
Full Paper Due

For more details:

<http://www.cityu.edu.hk/phmc>

An electronic copy of a one-page, 300-word abstract with name, address, phone and fax numbers, and email address must be submitted to the technical committee by email at [p hmconf@cityu.edu.hk](mailto:p hmconf@cityu.edu.hk) before September 30, 2009. Instructions for preparing the full paper will be sent to authors whose abstracts are accepted after review. Accepted papers will be placed into IEEE Xplore and inclusion in Engineering Index (EI) and EI Compendex, with some selected papers being placed into a special IEEE issue on PHM. Participants will be required to register for the conference upon notification of acceptance of their full papers.



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**About Macau**

Macau is a glorious slice of the Mediterranean tucked away on the South China Sea. It is this rich history that makes the cultural heritage of Macau special. There are many museums, monuments, churches and temples in Macau. A Portuguese colony for more than 500 years, Macau has retained much of its colonial charm, such as Largo do Senado, (Senado Square) contains some of the most quintessentially Portuguese buildings in the city. The square is next to the main road, Almeida Ribeiro. Just north of the square lies the impressive ruins of Sao Paulo, (St Paul's), once the biggest church in Asia.

If you're looking to explore the angel of Chinese Macau, you should head for a stroll along Rua De Felicidade. This district is packed with traditional shops, as well as Macau's oldest restaurant, Fat Siu Lau, which serves up a specialized roasted pigeon.

And if culture doesn't interest you, there is always the "Las Vegas of the East". Macau has recently outstripped Las Vegas to become the gambling centre of the world. In 2008, Macau pulled in US\$13.7 billion in revenue and outstripping the reported in Las Vegas to become the world's biggest casino draw. The Venetian Macau is twice the size of the Las Vegas original and offers a mind-boggling 10.5 million square feet. The attraction of Macau has clocked 30 million visitors in 2008!!

**Places to go**

**The A-Ma Temple** is located in the southeast portion of the Macau Peninsula, which is just next to the inner harbor at the bottom of Barra Hill The temple is over 600 years old and was erected before the Portuguese ever arrived. The A-Ma Temple is a destination offering silence and spectacular views. The temple contains six main parts which together make up a series of classical Chinese architectural treasures. Each year on the birthday of Macau and on Chinese New Year, disciples gather here to pay homage and pray for good fortune.

**Ruins of St. Paul's Church** was built in 1602 next to the Jesuit College of St. Paul's, the first Western college in the Far East. It was here that missionaries such as Matteo Ricci and Adam Schall studied Chinese before serving at the Ming Court in Beijing. After the expulsion of the Jesuits, the college was used as an army barracks.

**Macau Fisherman's Wharf** is just a five-minute walk from the Macau-HK Ferry Terminal and is a landmark for passengers arriving by ferry and helicopter. It is an energetic, fun place to go for shopping and eating. The Fisherman's Wharf complex includes over 150 stores and restaurants in buildings built in the styles of different world seaports.



**International Centre of Excellence in Prognostics and Health Management, City University of Hong Kong**

In collaboration with the CALCE PHM program, City University of Hong Kong (CityU), with headquarters in Hong Kong, is opening a CityU International Centre of Excellence in Prognostics and Health Management (PHM) in Shenzhen, China. This new center has been established because of growing interest in PHM implementation on the part of a large number of companies in China, particularly companies in the greater Guangdong area, which includes ShenZhen. Avionics, aerospace, computer, telecommunications and power companies are welcome and expected to become members of the new Center.

The CityU PHM Center is being started with a grant of over HK\$13M for the first two years in addition to extensive facilities, meeting rooms, and offices. CityU is also supporting grants for three post-doctoral positions and numerous graduate students interested in obtaining a higher education in the field of prognostics and health management. The initial studies of the new CityU PHM Center will focus on advancing system-level PHM hybrid (pattern recognition and physics of failure) algorithms, and implementing PHM methods for the Chinese industries. Sensor technologies with embedded PHM algorithms will also be developed. The CALCE PHM Center will be cooperating with the new CityU PHM Center to co-develop state-of-the-art methods and technologies. Prof. Pecht is a visiting chair professor at CityU, coordinating activities of the new CityU PHM Center and its cooperation with CALCE PHM to promote high quality prognostics research and development.

CityU is an outstanding university in China with a worldwide reputation in mathematics and engineering. Its new president, Prof. Way Kuo, is a member of the U.S. National Academy of Engineering, Academia Sinica (Taiwan), the International Academy for Quality, and the Chinese Academy of Engineering. President Kuo is a strong proponent of design-for-reliability methods and prognostics and is actively supporting this new center with help from Prof. Pecht.

