SHM in Action – How SHM works in Practice

A Special Session at the
International Workshop on Structural Health Monitoring 2009

Airbus is sponsoring the Most Practical SHM Technology Award
(see description at the end)

Objective:

To show how a structural health monitoring (SHM) system practically works in all fields. If you are working with SHM systems and would like to show in a short presentation how they practically work, then you shall participate. This presentation can be additional to exhibits or oral presentations and is specifically targeted to underline the practical aspect of the SHM.

Who can participate:

- Workshop Exhibitors,
- Workshop Presenters and,
- Workshop Participants.

Motivation:

There is a lot of SHM technology realised in software/hardware which has and is used for a variety of applications. This technology includes a monitoring system or system like approach being related to:

- Operational loads monitoring,
- Damage monitoring,
- Sensor signal processing, and
- Virtual damage simulation.

The session targets at:

- Showing the audience how SHM works in practical applications,
- Better understanding the practical issues of different SHM systems,
- Getting further feedback and requirements expressed from current and potential SHM users,
- SHM users to share their experience.

Procedure:

The session intends to show as much of demonstration cases as possible, addressing as many of the aspects mentioned below:

- The way the monitoring system and the test is operated, i.e.:
  - Type of sensors and actuators (if required) and their way of attachment to components, linkage to the signal generation and acquisition unit, etc;
  - Signal generation and acquisition unit as a hardware and how it operates;
  - Test preparation, the way input data are entered and sensor data are received and how the result is presented;
  - Procedure for sensor signal processing.
- The ‘man-machine interface’ such as data input and output display, results presentation;
- Component(s) tested, area/volume to be monitored, loading procedure and the damage initially observed by conventional means of non-destructive testing;
- Characteristics of the system such as weight, size, volume, reliability, cost, etc.

Each presentation is allowed for no more than 5 minutes through **a video, internet or a hardware demonstration only,** which will be directly displayed to the audience on a large screen. It is mandatory that the SHM system is shown in action. **Static displays are not acceptable.**

The presentations will be followed by a panel discussion where the audience as well as a panel of selected SHM applicants are invited to discuss the SHM systems shown.

The test cases being presented can be either based on self-developed or purchased SHM systems. The source of the SHM hardware is eligible to be mentioned but no further advertisement from or about the supplier of the SHM system will be accepted.

Any detailed background of the SHM system and the testing can be provided through the manuscript in the workshop proceedings. Provision of a manuscript in the proceedings is however not mandatory.

Exhibitors can provide a direct video link to their booth at the workshop such that demonstrations can be made from there and can be directly transmitted to the audience via a screen.

SHM in Action will be held during a plenary session. If you are interested in participating, please email IWSHM-Exhibition@structure.stanford.edu with a short description of the demo as soon as possible.

Most Practical SHM Technology for Aerospace Award by Airbus

Airbus is proud to sponsor a prize for the "Most Practical SHM Technology for Aerospace" demonstrated in SHM in Action. The session will be judged by a panel of representatives from industry and government. The $1000 prize will be awarded at the end of the session.