

# International Workshop on Radiation Imaging Detectors iWoRID 2011



**Sunday, July 3, 2011 - Thursday, July 7, 2011**

**ETH Zurich, Switzerland**

## **Scientific Program**

The workshop will have plenary sessions with invited and contributed papers presented orally, as well as a poster session. The invited talks will be chosen to review the status and the recent advances in the different areas. Several social events will be organized around the workshop. Below you find a coarse classification of the workshop topics, this will be refined with the abstract subjects submitted.

## Applications

Several sessions will be devoted to application since it covers the wide range from astronomy, nuclear to medical applications.

- Material Analysis
- X-ray diffraction and fluorescence
- Protein crystallography
- Tomography, high resolution and fast imaging
- Biological and medical imaging
- Electron microscopy
- Security systems and other industrial applications
- Applications at X-ray free electron lasers
- Neutron imaging
- Astronomical and space applications
- High energy physics
- Nuclear physics
- Fusion research

## Front-end Electronics and Readout

A complete session is devoted to ASICS since they are the key developments for a successful radiation detector. MAPS, CMOS and SiOI will be included here.

- Monolithic and hybrid systems
- Single photon counting and charge integrating front ends
- 3D asics
- Monolithic active pixel sensors
- CCDs
- Data readout architectures

- Hardware and software
- Data compression, transfer and storage

## Detector Systems

This session covers the wide variety of detector systems from extensive LHC detectors to small single diode systems, from visible light to heavy charged particles.

## Sensor Materials, Device Processing & Technologies

Sensor material, and sensor technologies are covered by this session.

- Silicon (single crystal and amorphous)
- Gallium Arsenide, Cadmium Telluride and other semiconductors
- 3D and edgeless sensors
- Processing
- Characterization
- Reliability
- Radiation damage
- Scintillators

## Imaging theory

- Integrating vs counting mode
- Energy weighting
- Correction algorithms

## High Energy Physics & Astronomy

Detectors and applications probing the standard model.

- Tracking detectors
- Vertex detectors

- Particle detectors
- Low and high energetic Photon detection

## **Free Electron Lasers**

Detector development dealing with high photon fluxes and its applications.

- Charge integrating
- DEPFET