








# Silicon Strips and Pixel Technologies





Conveners: Paula Collins, Michael Moll, Petra Riedler

## List of Lecturers and Tutors

	<p><b>Gianluca Aglieri Rinella</b>, CERN PH-ESE Member of ALICE and NA62 collaborations.</p> <p>Design and implementation of electronic systems for detectors. R&amp;D on detectors and systems.</p> <p><i><b>EDIT 2011:</b> Tutor on: "Operate a Mini HEP Experiment"</i></p>
	<p><b>Kazuyoshi Akiba</b>, Nikhef and UFRJ, Rio de Janeiro, Brazil</p> <p>Post-Doc at Nikhef since 2008, working on the LHCb Vertex Locator for the past 8 years. Expert in silicon detectors, controls and data acquisition systems and in the measurements of CKM phases.</p> <p><i><b>EDIT2011:</b> Tutor on Hands-on "The Medipix System"</i></p>
	<p><b>Phil Allport</b>, University of Liverpool, UK</p> <p>Member of ATLAS and RD50 collaborations.</p> <p>Member of ATLAS Upgrade Inner Tracker Steering Committee, Head of Liverpool Particle Physics Group and Chair of UK, Institute of Physics, High Energy Particle Physics Group.</p> <p><i><b>EDIT2011:</b> Professor of Excellence</i></p>

	<p><b>Richard Bates</b>, University of Glasgow, UK</p> <p>Member of the ATLAS collaboration working on the silicon inner tracker.</p> <p>Convenor of the new structures research line of the RD50 collaboration with a particular interest in 3D silicon detectors.</p> <p><b>EDIT2011: Tutor on Hands-on “Silicon Strip Detectors”</b></p>
	<p>Marc Winter and <b>Jerome Baudot</b> are members of the research team at IPHC-Strasbourg, France, developing, since more than a decade, CMOS pixel sensors for numerous applications (ILC, STAR, ALICE, SuperB, beam telescopes, hadrontherapy, single photons detection...).</p> <p><b>EDIT2011: Lecturer on “CMOS pixel sensors”</b>  <b>Tutor on Hands-on “The MIMOSA detector”</b></p>
	<p><b>Mara Bruzzi</b>, University and INFN of Florence</p> <ul style="list-style-type: none"> <li>- Associate Professor of Experimental Physics at the University of Florence;</li> <li>- RD50 research line convenor (Spokesperson / Co-Spokesperson from 2002 – 2010)</li> <li>- Development of Semiconductor Detectors for Medical Applications, participating in MAESTRO and PRIMA projects</li> </ul> <p><b>EDIT 2011: Lecturer on “Radiation Tolerant Silicon Detectors”</b></p>
	<p><b>Jan Buytaert</b>, CERN PH-ESE</p> <p>Member of the LHCb Collaboration</p> <p>Led the development of front-end readout ASICS and electronics for DELPHI and LHCb. Electronics coordinator of LHCb VELO upgrade.</p> <p><b>EDIT2011: Tutor on Hands-on “The Medipix System”</b></p>

	<p><b>Michael Campbell</b>, CERN PH-ESE</p> <p>Specialist in hybrid pixel detector readout electronics. Contributed to the development of pixel chips in RD19, Omega, Alice and LHCb. Spokesman of the Medipix2 and Medipix3 Collaborations. As well as pixel circuit design his R&amp;D interests include high density interconnect.</p> <p><i>EDIT2011: Professor of Excellence; Lecturer on "Future Developments and Challenges of Pixel Detectors"</i></p>
	<p><b>Gianluigi Casse</b>, University of Liverpool, Department of Physics, UK</p> <ul style="list-style-type: none"> <li>- Member of LHCb and ATLAS Upgrade collaborations.</li> <li>- Co-spokesperson of RD50</li> </ul> <p><i>EDIT 2011: Lecturer on "Radiation Tolerant Silicon Detectors"</i></p>
	<p><b>Costanza Cavicchioli</b>, CERN PH/AID-DT</p> <p>Member of the ALICE collaboration working on the Silicon Pixel Detector for its commissioning and optimization. Responsible for the tuning and optimization procedure for the SPD trigger and of the trigger configuration during data acquisition.</p> <p>R&amp;D interest: electronics for future silicon tracking detectors.</p> <p><i>EDIT2011: Tutor on Hands-on "The MIMOSA Detector" and "How to operate a mini-HEP experiment"</i></p>
	<p><b>Paula Collins</b>, CERN PH-LBD</p> <p>Member of the LHCb collaboration</p> <p>R&amp;D on semiconductor detectors, project leader of the LHCb Vertex Detector upgrade working group.</p> <p><i>EDIT 2011: Convener of "Silicon Strip and Pixel Technologies"</i></p>

	<p><b>Mauro Dinardo</b>, University of Colorado at Boulder, USA</p> <p>Member of the CMS and RD42 collaborations. I've performed the commissioning of the CMS pixel detector and I'm particularly interested in the construction of new generation of tracking detectors for HEP.</p> <p><b>EDIT 2011:</b> <i>Tutor on Hands-on "Hybrid Pixel Detectors"</i></p>
	<p><b>Daniel Dobos</b>, TU Dortmund University and CERN</p> <p>Research activities: R&amp;D of radiation hard high resolution trackers using pixel semiconductor and transition radiation detectors. Diamond beam monitors for ATLAS and LHC. Deputy project leader of the ATLAS Pixel nSQP project</p> <p><b>EDIT2011:</b> <i>Lecturer on "Present and future Pixel systems at the LHC", Tutor on Hands-on "Pixel systems at the LHC"</i></p>
	<p><b>Irena Dolenc Kittleman</b>, CERN PH</p> <p>R&amp;D of silicon detectors for future trackers in High energy physics experiment. Past activities focused on development of diamond based beam monitor for the ATLAS experiment.</p> <p><b>EDIT 2011:</b> <i>Tutor on Hands-on "Silicon Diodes" and "Silicon Strip Detectors"</i></p>
	<p><b>Adam Drozd</b>, CERN PH-DT</p> <p>2005-2009 member of the LHC quench protection system (QPS) group, since 2009 member of the Quality Assurance and Reliability Testing Lab. Main activity: investigating reliability issues for silicon detectors.</p> <p><b>EDIT 2011:</b> <i>Tutor on Hands-on "Interconnect and Reliability testing"</i></p>

	<p><b>Doris Eckstein</b>, DESY Hamburg, Germany</p> <p>Member of the CMS Collaboration working on tracker upgrade R&amp;D on radiation-hard silicon sensors</p> <p><i><b>EDIT 2011:</b> Tutor on Hands-on “Silicon Diodes”</i></p>
	<p><b>Lars Eklund</b>, University of Glasgow, UK</p> <p>Lars is a member of LHCb where he works on the Vertex Locator (VELO) and on analysis of CP asymmetries in Bs decays.</p> <p><i><b>EDIT 2011:</b> Tutor on Hands-on “Silicon Diodes”</i></p>
	<p><b>Christian Gallrapp</b>, CERN PH-ADE</p> <p>Member of ATLAS, RD42 and RD50 collaborations Research activity: R&amp;D on Silicon and Diamond pixel sensors for ATLAS-IBL and HL-LHC projects</p> <p><i><b>EDIT 2011:</b> Lecturer on “Present and Future Pixel Systems at the LHC”, Tutor on Hands-on “Pixel Systems at the LHC”</i></p>
	<p><b>Heinz Graafsma</b>, DESY-Hamburg, Germany</p> <p>Head of the Photon Science Group at DESY Workpackage leader "Detectors" for the European X-ray Free-Electron-Laser 25 years of experience in X-ray photon science, and synchrotron radiation instrumentation.</p> <p><i><b>EDIT 2011:</b> Lecturer on “Future Developments and Challenges of Pixel Detectors”</i></p>



**Frank Hartmann**, Karlsruhe Institute of Technology, Germany

Member of the CMS and RD50 collaboration  
Deputy Project Manager of the CMS Tracker  
Author of “Evolution of Silicon Sensor Technology in Particle Physics”

**EDIT 2011:** Professor of Excellence  
*Lecturer on “Introduction to Silicon Detectors”*



**Erik Heijne**

Erik is retired from CERN, part-time at Institute of Experimental and Applied Physics IEAP-CTU in Prague, part-time at Nikhef in Amsterdam

Member of ATLAS experiment and of Medipix collaborations  
Since 1973 working at CERN on development and applications of silicon detectors and associated (micro)electronics




**EDIT 2011:** *Professor of Excellence. Plenary Lecture: “Integrated Semiconductor Detectors for Tracking and Energy Measurement: How to use new technologies.”*



**Alan Honma**, CERN Physicist in PH/DT group

Responsible for the Wire Bonding Lab as well as the Quality Assurance and Reliability Testing Lab. Recent projects include LHC quency protection system, CMS preshower silicon pad detector, CMS silicon strip tracker detector. Current interests are investigating high reliability issues for current and future silicon detectors as well as participating in R&D for SLHC and ILC silicon detectors.

**EDIT2011:** *Tutor on Hands-on “Wire Bonding and Reliability Testing”*

	<p><b>Markus Keil</b>, 2nd Institute of Physics, Georg-August-Universität Göttingen and CERN</p> <p>PhD on silicon and diamond pixel detectors  2001 - 2005: Construction of a pixel detector for a heavy ion experiment (NA60)  since 2006: Member of the ATLAS experiment, main activities:</p> <ul style="list-style-type: none"> <li>- detector group leader in the ATLAS pixel detector</li> <li>- B-tagging studies</li> </ul> <p><i>EDIT2011: Lecturer on "Hybrid Silicon Pixel Detectors", Tutor on Hands-on "Hybrid Pixel Detectors"</i></p>
	<p><b>Robert Klanner</b></p> <p>Professor Emeritus for Physics at the University of Hamburg  Half a decade of physics activity ranging from pioneering investigations in meson physics through to service as spokesman of two international particle physics collaborations, through to the founding of the ZEUS experiment, and significant activity in the field of solid state detectors. A founding father of the silicon strip detector, and a pioneer of many position sensitive devices including silicon drift chambers, silicon photomultipliers, MAPS and radiation hard devices.</p> <p><i>EDIT 2011: Professor of Excellence</i></p>
	<p><b>Gregor Kramberger</b>, Jožef Stefan Institute, Ljubljana, Slovenia</p> <p>Member of ATLAS, RD42, and RD50 collaborations.  Coordinator of the RD50 Full Detector Systems research line</p> <p><i>EDIT2011: Tutor of Hands-on "Silicon Diodes" and "Laser Induced Signals"</i></p>



**Marian Krivda**, University of Birmingham, UK

Member of the ALICE and NA62 experiment.  
Electronics designer for silicon pixel detectors and trigger systems.

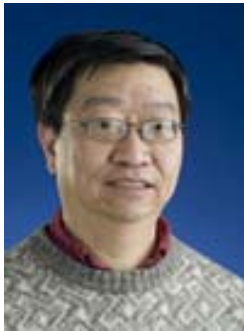
**EDIT 2011** : Tutor on Hands-on "Operate a Mini HEP Experiment"



**Manfred Krammer**, Institute of High Energy Physics of the Austrian Academy of Sciences, Vienna, Austria

Member of the experiment CMS, Lecturer at the Technical University Vienna and University Vienna  
Organiser of the conference series "Vienna Conference on Instrumentation", Deputy Director Institute of High Energy Physics

**EDIT2011**: Professor of Excellence; Lecturer on "Introduction to Silicon Detectors"



**Simon Kwan**, Fermilab Batavia, USA

Member of CMS, RD42, and RD50 collaborations.  
USCMS Pixel Project Manager.  
Head of the Electronic System Engineering Department at Fermilab

**EDIT2011**: Professor of Excellence. Lecturer on "Future Developments and Challenges of Pixel Detectors", Tutor on Hands-on "Hybrid Pixel Detectors"






**Alessandro La Rosa**, CERN PH-DT

Member of ATLAS, RD42 and RD50 collaborations  
Research activity: R&D on Silicon and Diamond pixel sensors for ATLAS-IBL and HL-LHC projects, since May 2010 Co-ordinator of ATLAS-IBL irradiation and beam test activities  
Since Sept. 2009 Co-ordinator of Radiation Hardness Working Group for ATLAS-3D Collaboration

**EDIT 2011**: Lecturer on "Present and Future Pixel Systems at the LHC", Tutor on Hands-on "Pixel Systems at the LHC"



	<p><b>Vito Manzari</b>, INFN Bari, Italy</p> <p>Project Leader of the ALICE Silicon Pixel Detector and formerly deputy spokesperson of the NA57 experiment.  Research activities: heavy ion physics; development and construction of pixel detectors for the heavy-ion experiments WA97/NA57 at the SPS and ALICE at LHC.</p> <p><b>EDIT 2011:</b> <i>Lecturer on "Pixel Detectors in HEP and HI Experiments" and Tutor on Hands-on "Operate a Mini HEP Experiment"</i></p>
	<p><b>Florentina Manolescu</b>, CERN PH-DT</p> <p>Member of AMS and CMS Collaborations - Silicon Inner Tracker. At present member of the Quality Assurance and Reliability Testing Lab.</p> <p><b>EDIT2011:</b> <i>Tutor on Hands-on "Wire Bonding and Reliability Testing"</i></p>
	<p><b>Annalisa Mastroserio</b>, CERN PH-AID</p> <p>Member of the ALICE experiment since 2004 and member of the ALICE Silicon Pixel Detector group since 2008.  Research activity : development and finalization of the calibration procedures, development of the SPD online monitoring tools and control of the data quality of the detector.</p> <p><b>EDIT 2011 :</b> <i>Tutor on Hands-on "Operate a Mini HEP Experiment"</i></p>



**Marko Milovanovic**, MC-PAD Early Stage Researcher at Jožef Štefan Institute in Ljubljana, Slovenia

R&D on semiconductor detectors for future High Energy Physics experiments, in particular radiation hard silicon microstrip detectors.

**EDIT 2011** : Tutor on Hands-on "Silicon Diodes" and "Silicon Strip Detectors"



**Michael Moll**, CERN, PH-DT (Detector Technologies group)

Responsible for Irradiation Facilities and Silicon Sensor Developments within PH-DT  
Co-spokesperson of the RD50 collaboration

**EDIT2011**: Convener of "Silicon Strip and Pixel Technologies"



**Andrei Nomerotski**, Oxford University

Andrei Nomerotski took his undergraduate degree in 1985 from Novosibirsk State University, Russia, and his graduate degree in 1996 from the Università di Padova, Italy. Since then he has worked at the Fermi National Accelerator Laboratory, Chicago, USA at CDF and DZero detectors.

Andrei joined the Physics Department of the Oxford University in 2005. His main expertise is in the field of silicon detectors and fast imaging for particle physics and other applications.




**EDIT2011**: Lecturer on "Application of Silicon in Trackers"



**Nicola Pacifico**, Marie Curie Fellow within the network MC-PAD and PhD student at the University of Bari (Italy)

Currently is working on multi-technique characterization of silicon detectors for the upgrade of tracking systems for HEP experiments at CERN.

**EDIT 2011**: Tutor on Hands-on "Silicon Diodes" and "Laser Induced Signals"

	<p><b>Heinz Pernegger</b>, CERN, PH-ADE-ID</p> <p>Research activities: Active R&amp;D on semiconductor detectors for present and future trackers in High Energy Physics experiments, in particular high-resolution radiation hard silicon detectors (strip and pixel) and CVD diamond detectors. At present technical coordinator of the new ATLAS pixel b-layer detector (ATLAS Insertable B-Layer)</p> <p><i><b>EDIT2011:</b> Lecturer on "Present and future Pixel systems at the LHC", Tutor on Hands-on "Pixel systems at the LHC"</i></p>
	<p><b>Richard Plackett</b>, University of Glasgow, UK</p> <p>A member of the LHCb experiment and the Medipix and RD50 collaborations. Detector Development Initiative Coordinator for the Scottish Universities Physics Alliance (SPUA). Infrastructure Coordinator for the LHCb VELO Upgrade and Project Leader for the Timepix Telescope. Currently working on developing a new Medipix derived pixel system for the VELO Upgrade. Previously worked on the design and construction of the LHCb RICH1 sub-detector.</p> <p><i><b>EDIT 2011:</b> Tutor on Hands-on "The Medipix System"</i></p>
	<p><b>Petra Riedler</b>, CERN PH-AID</p> <p>Member of the ALICE collaboration</p> <p>R&amp;D on semiconductor detectors, in particular silicon pixel detectors for present and future experiments; Deputy project leader of the ALICE silicon pixel detector and convener of a working group for the ALICE inner tracker upgrade.</p> <p><i><b>EDIT 2011:</b> Convener of "Silicon Strip and Pixel Technologies"</i></p>

	<p><b>Romualdo Santoro</b>, University of Bari, Italy</p> <p>Member of the ALICE collaboration. He had a major contribution in the assembly, characterization and commissioning of the ALICE Silicon Pixel Detector (SPD). Responsible of the SPD Detector Control System (DCS), SPD system Run Coordinator and ALICE Period Run Coordinator (May 2010). Actually he is involved in the ALICE Inner Tracking System upgrade</p> <p><b>EDIT2011:</b> <i>Tutor on Hands-on " Operate a mini HEP experiment"</i></p>
	<p><b>William Trischuk</b>, Professor of Physics at the University of Toronto</p> <p>Member of the ATLAS experiment Past spokesperson of the diamond detector collaboration (RD42), Chair of the organising committee of HCP2010, Director of the Institute of Particle Physics in Canada</p> <p><b>EDIT 2011:</b> <i>Professor of Excellence; Lecturer on "Application of Silicon in Trackers"</i></p>
	<p><b>Marc Winter</b> and Jerome Baudot are members of the research team at IPHC-Strasbourg developing, since more than a decade, CMOS pixel sensors for numerous applications (ILC, STAR, ALICE, SuperB, beam telescopes, hadrontherapy, single photons detection...).</p> <p><b>EDIT2011:</b> <i>Professor of Excellence. Lecturer on "CMOS pixel sensors"</i></p> <p><i>Tutor on Hands-on "The MIMOSA detector"</i></p>

### Further Tutors and Lecturers

<b>First</b>	<b>Last Name</b>	<b>Institution</b>
Gabriel	Blaj	CERN (PH/ESE)
Jose Enrique	Garcia Navarro	University of Geneva
Ian	McGill	CERN (PH/DT)