

Special Physics seminar

Thursday 12th May 2011 at 15h30
(coffee at 15h15)

Belvaux
Room F0.1

Talk by Prof. Dr. Marc Schiltz

École Polytechnique Fédérale de Lausanne (EPF-L)
and Secretary General of the FNR as from January 2011

Advances in synchrotron X-ray diffraction methods as a basis for new and improved tools in structural biology

Macromolecular X-ray crystallography has dramatically changed since the pioneering work of Max Perutz. Among the many significant advances that had an impact on structural biology, the advent of synchrotron radiation sources is perhaps the single most important event that has transformed the field and opened up completely new perspectives. I will present the outcome and prospective of research projects in X-ray diffraction methods that are directed towards addressing some of the new challenges that have arisen in synchrotron-based structural biology. The move towards ever smaller samples and more intense X-ray beams has now led to the situation where radiation damage has become the major limiting factor for most experiments and imposes severe constraints on the minimal sample size and lifetime. Under these circumstances, it becomes of the outmost importance to be able to extract the maximum amount of information from X-ray diffraction experiments. This can be achieved by making active use of the polarisation and coherence properties of the radiation produced by synchrotrons and at future XFEL sources. New methods are also being developed to exploit hitherto inaccessible intensity information by enlarging the range of samples that can be used in X-ray diffraction analysis to include polycrystalline samples and/or nanocrystals.

Next Physics Seminars

- **Tuesday, 24th May 2011:**
Belval, 16:15 **Dr. German Olivares, UL**
"Change detection analysis in geodesic time series"
- **Tuesday, 14th June 2011:**
Campus Limpertsberg, 16:15 **Dominik Berg, UL**
"The formation and characterization of kesterite thin film solar cells – challenges and solutions"
- **Tuesday, 28th June 2011:**
Belval, 16:15 **Prof. Dr. M. Farle, U Duisburg-Essen**
"Influence of nanoparticle shapes and morphologies on magnetic hardness"