

# Experiments Division Students Day

*ESRF, 20<sup>th</sup> October 2003*



***Organisers:***  
*Michael Krisch*  
*Ute Ramseger*

# Experiments Division Students Day

*ESRF, 20th October 2003*

## Overview of the day

- 08:45 Introduction by the Directors of Research
- 09:00 – 09:45 **Macromolecular Crystallography**
- 09:45 – 10:30 **Soft Condensed Matter**
- 10:30 - 11:00 Coffee break*
- 11:00 – 12:30 **Electronic, magnetic and structural properties of condensed matter**
- 12:30 – 14:00 Lunch in the ESRF canteen*
- 14:00 – 15:05 **Surfaces and Interfaces**
- 15:05 – 16:10 **Imaging**
- 16:10 – 16:30 Coffee break*
- 16:30 – 17:00 **Presentation of the Students Organisation**
- 17:00 Poster session followed by a dinner aperitif on the mezzanine *Open end!*

# **Experiments Division Students Day**

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## **Talks**

## **9h00 – 9h45 Session I**

### **Macromolecular Crystallography**

*Chairman: S. McSweeney*

**09:05 Linda MIALLAU (ID14)**

“Structure and reactivity of the 6-diphosphocytidyl-2C-methyl D-erythritol from E. coli. An essential enzyme in the biosynthesis of isoprenoids and a potential drug target”

**09:25 Jean-Baptiste ARTERO (ID14)**

“Structural Studies of gamma crystallin by Neutrons and X-rays diffractions”

## **9h45 – 10h30 Session II**

### **Soft Condensed Matter**

*Chairman: C. Riekkel*

**09:50 Aurelien GOURRIER (ID13)**

“Probing micro-deformation in polymers using micro-diffraction”

**10:10 Gabor BELINA (ID02)**

“USAXS studies of phase transition in stearyl coated silica particles”

**10:30 – 11:00**      *Coffee break on the mezzanine*

## **11h00 – 12h30 Session III**

### **Electronic, magnetic and structural properties of condensed matter**

*Chairman: A. Kvick*

**11:05 Luca PALIN (ID31)**

“Low temperature phase transitions and crystal structures of organic molecules using powder diffraction“

**11:25 Iliia SERGUEEV (ID18/ID22N)**

“Rotational and translational glass dynamics studied by nuclear resonance scattering techniques“

**11:45 Laurence BOUCHENOIRE (BM28-XMAS)**

“X- ray phase-plate studies of ferromagnets”

**12:05 Juan RUBIO-ZUAZO (BM25-SPLINE)**  
“La(x)Ca(1-x)MnO<sub>3</sub>/SrTiO<sub>3</sub>: Correlation between magnetic properties and atomic structure and morphology”

**12:30 – 14:00**      *Lunch in the ESRF canteen*

## **14h00 – 15h05 Session IV** **Surfaces and Interfaces**

*Chairman: S. Ferrer*

**14:05 Angelo MALACHIAS (ID01)**  
“3D composition of epitaxial nanocrystals by anomalous x-ray diffraction: Observation of a Si-rich core in Ge domes on Si(100)”

**14 :25 Manuel VALVIDARES (ID03)**  
“Properties of epitaxial ultrathin Cobalt films on Platinum substrates”

**14:45 Frank Uwe RENNER (ID32)**  
“The Beginning of Corrosion: Cu<sub>3</sub>Au(111) as an Example”

## **15h05 – 16h10 Session V** **Imaging**

*Chairman: J. Baruchel*

**15:10 Jean-Francois ADAM (ID17)**  
“Synchrotron Radiation CT-Therapy of malignant brain tumors loaded with an iodinated contrast agent: preclinical trials on rats bearing F98 gliomas”

**15:30 Bruno GOLOSIO (ID22)**  
“Developments in fluorescence tomography”

**15:50 Elodie PAGOT (ID17+ID19)**  
“Quantitative comparison between two phase contrast techniques: Diffraction Enhanced Imaging and Propagation for mammography”

**16:10 – 16:30**      *Coffee break on the mezzanine*

**16:30 Presentation of the Students Organisation**

**17:00 Poster session followed by a dinner aperitif on the mezzanine**

*Open end!*

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## **Posters**

## Macromolecular Crystallography

### **I-1 Virgile ADAM (ID14A/B)**

“Towards a structural study of the catalytic mechanism of D. baarsii superoxyde reductase”

### **I-2 Jean-Baptiste ARTERO (ID14)**

“Structural Studies of gamma crystallin by Neutrons and X-rays diffractions”

### **I-3 Cyril DIAN (ID14)**

“Structural and functional studies on the regulatory role of protein pur-alpha and its complexes: Towards the Development of an Efficient Bacterial Cell Biosensor for Nitrotoluenes: The Crystal Structure of the Transcriptional Regulator DntR”

### **I-4 Guillaume DURIN (ID14)**

“Towards a Structural study of the catalytic mechanism of Protochlorophyllide Oxydoreductase”

### **I-5 Linda MIALLAU (ID14)**

“Structure and reactivity of the 6-diphosphocytidyl-2C-methyl D-erythritol from E. coli. An essential enzyme in the biosynthesis of isoprenoids and a potential drug target”

## Soft Condensed Matter

### **II-1 Lutz WIEGART (ID10B)**

“Thermodynamical and structural properties of lipid monolayers on sol surfaces”

### **II-2 Aurelien GOURRIER (ID13)**

“Phase transition induced by micro-deformation in Vectra, a liquid crystalline copolyester”

### **II-3 Daniel SAPEDE (ID13)**

“Structure and Dynamics of Spider Silk: A Neutron and X-ray scattering study”

## Electronic, magnetic and structural properties of condensed matter

### **III-1 Luca PEVERINI (Optics Group) Poster moved to Surfaces and Interfaces!**

“A real-time in-situ X-ray scattering apparatus to monitor surface roughness”

### **III-2 Vedran VONK (ID15)**

“Towards in-situ X-ray Diffraction during Pulsed Laser Deposition of thin YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub> films on SrTiO<sub>3</sub>”

**III-3 Maud NEMOZ (BM2-D2AM CRG)**

“Modeling the diffraction profile of perovskite oxide superlattices”

**III-4 Elisabetta BRUNELLO (ID02)**

“The mechanism of force generation of striated muscle studied by time-resolved X-ray diffraction”

**III-5 Hervé PALENCHE (BM02)**

“Methodological study by anomalous diffraction of cation distributions in X type zeolites under adsorption conditions”

**III-6 Federica VENTURINI (ID08)**

“The role of hybridisation: the Ce 4f electronic states in the isostructural Cerium compounds  $CeX_2Ge_2$  [X=Co, Ni, Cu]”

**III-7 Laurence BOUCHENOIRE (BM28)**

“X- ray phase-plate studies of ferromagnets”

**III-8 Gianluca CIATTO (BM08)**

“Short range ordering in InGaAsN, a dilute III-V nitride”

**III-9 Laura CRAPANZANO (ID30)**

“Structure and dynamics of liquid sulfur at high pressure”

**III-10 Daniele ANTONANGELI (ID28)**

“Elasticity of hcp metals under high pressure studied by inelastic X-ray scattering”

**III-11 Thomas ROTH (ID18/22)**

“The nuclear lighthouse effect: Development and first applications”

**III-12 Estrella FERNANDEZ-SANCHEZ (BM25-SPLINE)**

“First principle study of the properties of a Cylindrical Mirror Analyzer: Complete calculation of the electron trajectory”

**III-13 Angel LOPEZ-MUNOZ (BM25-SPLINE)**

“Numerical simulation of the Cylindrical Mirror Analyzer: Case of an extended source”

**III-14 Raphaëlle DIANOUX (Labs & Services)**

“Nonlinear analysis of electrostatic force microscopy”

## **Surfaces and Interfaces**

**IV-1 Luciana CAPELLO (ID01)**

“Ultra shallow junctions characterized by means of surface sensitive x-ray scattering techniques”



**IV-2 Michael SZTUCKI (ID01)**

“Strain analysis of a quantum-wire system produced by cleaved edge overgrowth using grazing incidence x-ray diffraction”

**IV-3 Laure LIBRALESSO (ID32)**

“High-K dielectrics for Microelectronics”

**IV-4 Sebastian THIESS (ID32)**

“X-ray Standing Wave and Photoemission Studies of YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7</sub> Single Crystals”

**IV-5 Gauthier TORRICELLI (Surface Science Lab/TBS)**

“High precision measurement of long range interaction in the 0.1 to 0.5 micrometers range”

**III-1 Luca PEVERINI (Optics Group)**

“A real-time in-situ X-ray scattering apparatus to monitor surface roughness”

## **Imaging**

**V-1 Marie-Claude BISTON (ID17)**

“Cure of Fisher rats bearing lethal F98 glioma, treated with monochromatic synchrotron X-rays associated with cisplatinum”

**V-2 Paola COAN (ID17)**

“Study and application of phase contrast techniques in biomedical imaging at ESRF”

**V-3 Manuel FERNANDEZ (ID17)**

“SAXS and DEI studies of Breast Tissues”

**V-4 Aurélie JOUBERT (ID17)**

“Enhanced radiosensitivity observed on endothelial cells irradiated with monochromatic synchrotron X-rays in presence of iodinated contrast agents”

**V-5 Sylvie MONFRAIX (ID17)**

“Effect of tidal volume on distribution of ventilation assessed by in vivo quantitative tomography with synchrotron radiation”

**V-6 Pierrick REGNARD (ID17)**

“Gafchromic film dosimetry for microbeam radiation therapy”

**V-7 Caroline BOUDOU (ID17)**

Monte Carlo based dosimetry for SR tomotherapy

**V-8 Rajmund MOKSO (ID19)**

“X-ray focusing for microtomography”

**V-9 Eva PEREIRO LOPEZ (ID19)**

“Direct observation of grain boundary penetration in the Al/Ga system”

# **Experiments Division Students Day**

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## **Participants**

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