

Ultrafast Structural Dynamics with Pulsed X-rays

ESRF Grenoble, 3rd – 4th June 2004



PROGRAMME

Thursday, 3rd June 2004

INTRODUCTION (Chair: M. Wulff)

9:00 Welcome by **Francesco Sette**

**ESRF Director of
Research, Grenoble**

TIME-RESOLVED STUDIES OF STRUCTURAL DYNAMICS IN BIOLOGY (Chair: M. Wulff)

9:10 Watching proteins function with 150 ps time-resolved X-ray crystallography

Keith Moffat
(Chicago, USA)

9:45 Watching proteins function with time-resolved X-ray crystallography and molecular dynamics simulations

Philip Anfinrud
(Washington DC, USA)

10:20 *Coffee Break*

10:50 Reaction mechanisms in structural biology

Richard Neutze
(Göteborg, Sweden)

11:25 Catching transient species in protein crystals: from low temperature trapping to real-time movies

Dominique Bourgeois
(Grenoble, France)

12:30 *Lunch at the ESRF canteen*

TIME-RESOLVED ELECTRON DIFFRACTION IN CHEMISTRY (Chair : Ph. Anfinrud)

14:00 Time Resolved Electron Diffraction

Hyotcherl Ihee
(Kaist, Korea)

FEMTOSECOND EXPERIMENTS WITH EXISTING X-RAY SOURCES (Chair : A. Plech)

14:30 Picosecond X-ray diffraction studies of coherent phonons (a) in a semiconductor heterostructure and (b) in the proximity of a structural phase transition

Peter Sondhaus
(Lund, Sweden))

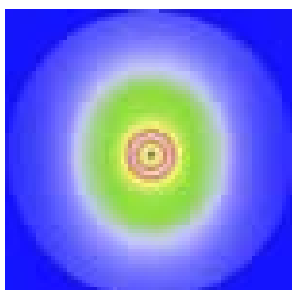
15:00 The technical status of the diffraction camera on beamline ID09B

Michael Wulff
(Grenoble, France)

15:20 *Coffee Break*

16:00 *Visit of beamline ID09B*

18:30 *Departure for Workshop dinner at the Restaurant "Hotel des Skieurs" in Le Sappey en Chartreuse (Dinner at 19:00)*



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9:00 Introduction by **Yves Petroff**

**Ministry of
Research, Paris**

TIME-RESOLVED STUDIES OF STRUCTURAL DYNAMICS IN CHEMISTRY (Chair: S. Bratos)

9:20 Nanoscale dynamics and pulsed X-ray scattering

Anton Plech
(Konstanz, Germany)

9:50 Basics and Applications of Time-resolved X-ray Diffraction

Simone Teichert
(Göttingen, Germany)

10:20 Structural dynamics of photo-induced phase transition probed by pulsed X-ray diffraction

Eric Collet
(Rennes, France)

10:50 *Coffee Break*

11:20 Picosecond X-ray Absorption Spectroscopy: Application to Coordination Chemistry Compounds in Solution

Melanie Saes
(Villigen, Switzerland)

11:50 Visualising chemical reactions by picosecond X-ray diffraction

Michael Wulff
(Grenoble, France)

12:30 *Lunch at the ESRF canteen*

THEORY AND MOLECULAR DYNAMICS (Chair: R. Neutze)

14:00 X-ray "filming" of atomic motions: theory and experiment

Savo Bratos
(Paris, France)

14:30 Analysis of time-dependant x-ray diffraction signals with the help of Molecular Dynamics simulations

**Rodolphe
Vuilleumier**
(Paris, France)

15:00 Picosecond Laue crystallography: from data acquisition to movies

Friedrich Schotte
(Washington DC)

15:30 *Coffee Break*

PICOSECOND AND FEMTOSECOND X-RAY SOURCES (Chair: G. Grübel/M. Wulff)

16:00 Future trends for short period undulators

Pascal Elleaume
(Grenoble, France)

16:15 Status on the development of femtosecond x-ray radiation using lasers and their application

**Kim Ta Phuoc
(Antoine Rousse)**
(Paris, France)

16:45 Time-resolved experiments using the VUV and X-ray free electron lasers at DESY - Opportunities and challenges

Josef Feldhaus
(Hamburg, Germany)

17:15 Round table discussion

17:45 *Farewell Cocktail at the ESRF*