



### **EUSpec Training School on Multiple Scattering Codes : 27-30 June 2016**

- 1<sup>st</sup> day : theory courses on multiple scattering  
[\(Louis Antoine Hall, Building 2\)](#)

|               |   |
|---------------|---|
| 8h15 - 8h45   | Registration + welcome coffee (R. Römling-Engl, E. Robin)   |
| 8h45 - 9h00   | Welcome of the participants (D. Sébilleau and K. Hatada)  |
| 9h00 - 9h45   | D. Sébilleau (Rennes) : <i>Introduction to (multiple) scattering theory</i>   |
| 9h45 - 10h30  | Jan Minár (Munich) : <i>Multiple scattering formalism as a basis for electronic structure calculations</i>  |
| 10h30 - 11h00 | Coffee break  |
| 11h00 - 11h45 | K. Hatada (Rennes) : <i>Full potential multiple scattering theory space with space filling cells in real space</i>  |
| 11h45 - 12h30 | C. R. Natoli (Frascati) : <i>Computing the potential : the phagen_scf code</i>  |
| 12h30 - 13h30 | Lunch break   |
| 13h30 - 14h15 | O. Šipr (Prague) : <i>DMFT and multiple scattering theory</i>   |
| 14h15 - 15h00 | M. Benfatto (Frascati) : <i>MXAN and Molecular Dynamic: a new way to look to the XANES energy region</i>  |
| 15h00 - 15h45 | A. Di Cicco (Camerino) : <i>X-ray absorption spectroscopy and n-body distribution functions: theoretical background of the GNXAS data-analysis method</i> |
| 15h45 - 16h15 | Coffee break + posters installation ( <a href="#">posters in rooms 203-204, building 2</a> )  |
| 16h15 - 17h00 | P. Krüger (Chiba) : <i>Multichannel multiple scattering in R-matrix formalism</i>   |
| 17h00 - 17h45 | A. Taranukhina (Rostov) : <i>Multiple scattering in Green's function formalism: one channel and multichannel versions</i>                                 |

- days 2-4 : training on the computer codes : MXAN (Frascati), GNXAS (Camerino), MsSpec (Rennes), FPMS (Rennes), MCMS (Chiba) : **hands-on in room 250, 2nd floor of building 2, posters in rooms 204-205 and coffee in room 203**

|             | <b>Tuesday the 28th<br/>June 2016</b>                        | <b>Wednesday the 29th<br/>June 2016</b>                    | <b>Thursday the 30th<br/>June 2016</b>        |  |
|-------------|--|--|---|--|
| 8h30-10h30  | Hands-on MXAN -1 :<br>M.Benfatto/E. Pace                     | Hands-on MsSpec -1 :<br>D. Sébilleau/T. Jaouen             | Hands-on MCMS -1 :<br>P. Krüger/A. Koide      | WG2-WG5<br>meeting<br>(organised by B.<br>Brena and M.<br>Pedio)<br>room 207 |
| 10h30-11h00 | Coffee break/posters   | Coffee break/posters                                       | Coffee break/posters                          |  |
| 11h00-12h30 | Hands-on MXAN -2 :<br>M.Benfatto/E. Pace                     | Hands-on MsSpec -2:<br>D. Sébilleau/T. Jaouen              | Hands-on MCMS -2:<br>P. Krüger/A. Koide       |  |
| 12h30-13h30 | Lunch break  | Lunch break  | Lunch break                                   |  |
| 13h30-15h30 | Hands-on GNXAS -1 :<br>A. Di Cicco/M. Minicucci              | Hands-on FPMS -1 :<br>K. Hatada/A. Koide                   | Hands-on : MXAN, GNXAS,<br>MsSpec, FPMS, MCMS | EUSpec<br>management<br>committee<br>meeting<br>room 207                     |
| 15h30-16h00 | Coffee break/posters   | Coffee break/posters                                       | Coffee break/posters                          |  |
| 16h00-17h30 | Hands-on GNXAS-2:<br>A. Di Cicco/ M. Minicucci               | Hands-on FPMS -2 :<br>K. Hatada/A. Koide                   | Poster session<br>Best poster prize           |  |
| 17h30-18h30 | Local beers tasting session<br><b>(Club des Professeurs)</b> | Visit of <i>Parlement de Bretagne</i> at 17h30             | Conclusion                                    |  |
| 19h00-22h30 |  | Workshop dinner<br>at the <i>Paris-New-York restaurant</i> | Reception at the <i>Town Hall</i> at 18:30    |  |

**MSNano conference: 1-2 July 2016**

- 1<sup>st</sup> of July 2016: 4<sup>th</sup> MSNano workshop : amphitheater M, building 42 (ESIR)

| Time          | Talk  | Chair                   |
|---------------|---|-------------------------|
| 8h00 - 8h30   | Registration (R. Römling-Engl, E. Robin)  |                         |
| 8h30 - 8h45   | Welcome (D. Sébilleau, H. Ebert)<br>Obituaries : W. Temmerman (H. Ebert), Z. Wu (A. Marcelli), W. Kohn (J. J. Rehr)   |                         |
| 8h45 - 9h10   | M. Cammarata (Rennes) : <i>Time resolved X-ray absorption Experiments (6 to 18 keV) at Synchrotrons and Free Electron Lasers</i>  | K. Hatada               |
| 9h10 - 9h35   | A. Di Cicco (Camerino) : <i>X-ray absorption with free electron lasers: first results at Fermi@Elettra</i>  | K. Hatada               |
| 9h35 - 10h00  | O. Šipr (Prague) : <i>Full-potential polarized XANES calculation by combining pseudopotential and multiple-scattering methods: A poor-man's solution</i>                    | A. Gellé                |
| 10h00 - 10h25 | H. Ebert (Munich) : <i>Inclusion of temperature effects in the calculations of response properties</i>  | A. Gellé                |
| 10h25 - 10h40 | Coffee break  |                         |
| 10h40 - 11h05 | C. R. Natoli (Frascati) : <i>Investigation of the ground state of Au-supported FePc Film based on the interpretation of Fe K- and L-edge XMCD</i>                           | H. Ebert                |
| 11h05 - 11h30 | P. Krüger (Chiba) : <i>L-edge absorption and dichroism in low symmetry (d0) compounds</i>   | H. Ebert                |
| 11h30 - 11h55 | A. Taranukhina (Rostov on Don) : <i>Multichannel L-absorption calculations by analytic continuation of Green's function onto complex energy plane</i>                       | H. Ebert                |
| 11h55 - 12h50 | Lunch break   |                         |
| 12h50 - 13h15 | P. Turban (Rennes) : <i>Ballistic Electron Emission Microscopy : hot-electrons for probing interface electronic properties at the nanoscale</i>                             | T. Fujikawa             |
| 13h15 - 13h40 | K. Hatada (Rennes) : <i>Multiple scattering theory of BEEM in real space</i>  | T. Fujikawa             |
| 13h40 - 14h05 | C. Godet (Rennes) : <i>Photoelectron energy loss spectroscopy : retrieving the Energy Loss Function from XPS experiments</i>  | P. Krüger               |
| 14h05 - 14h30 | T. Fujikawa (Chiba) : <i>Plasmon losses in core photoemission spectra</i>   | P. Krüger               |
| 14h30 - 14h55 | J. Minár (Munich)/K. Hatada (Rennes)/N. Komiya (Chiba) : <i>The ESL library / The ES2MS package</i>   | P. Krüger               |
| 14h55 - 15h10 | Coffee break  |                         |
| 15h10 - 15h35 | D. Sébilleau (Rennes) : <i>A complete multiple scattering approach to EELS</i>  | C. Natoli               |
| 15h35 - 16h00 | R. Choubisa (Pilani) : <i>Coincidence electron impact ionization processes on atoms and extended targets</i>  | C. Natoli               |
| 16h00 - 16h25 | T. Jaouen (Fribourg) : <i>Layer-resolved Auger electron diffraction study of Mg atom incorporation at MgO/Ag(001) interface</i>   | C. Natoli               |
| 16h25 - 16h50 | W. Chu (Hefei) : <i>Structure-property relationship of nanomaterials for the energy storage and conversion studied by XAS and MS calculations</i>                           | D. Sébilleau            |
| 16h50 - 17h15 | C. Zou (Hefei) : <i>The electronic and structural transitions studies of VO<sub>2</sub> epitaxial film by X-ray diffraction and polarized X-ray absorption spectroscopy</i> | D. Sébilleau            |
| 17h15 - 17h40 | T. Miyanaga (Hirosaki) : <i>XAES study on luminescent Ag-zeolites</i>   | D. Sébilleau            |
| 17h40 - 18h40 | Round table: <i>How to extend the ideas of the MSNano network and federate multiple scattering at European level?</i> (room 4, building 41)                                 | D. Sébilleau / H. Ebert |
| 18h40 - 19h00 | Conclusion (D. Sébilleau, H. Ebert)   |                         |

- 2<sup>nd</sup> of July 2016: A tribute to Rino Natoli for his 75<sup>th</sup> birthday  
(amphitheater M, building 42 ---ESIR)

| Time          | Talk   | Chair          |
|---------------|--|----------------|
| 8h30 - 9h00   | Welcome (D. Sébilleau, A. Di Cicco)  |                |
| 9h00 - 9h30   | F. Palumbo (Frascati) :  | C. S. Fadley   |
| 9h30 - 9h45   | R. Gunnella (Camerino) : <i>Surfaces: structure and soul chez Rino</i>   | C. S. Fadley   |
| 9h45 - 10h00  | K. Hatada (Rennes) : <i>Revolutionary, Innovative, Novel, Outstanding</i>  | C. S. Fadley   |
| 10h00 - 10h15 | S. Di Matteo (Rennes) : <i>Learning from Rino: Sum-Rules, V<sub>2</sub>O<sub>3</sub> &amp; Latino</i>  | C. S. Fadley   |
| 10h15 - 10h30 | A. Taranukhina (Rostov on Don) : <i>Multi-aqueduct approach to the interaction with Rino Natoli</i>  | C. S. Fadley   |
| 10h30 - 10h45 | Coffee break   |                |
| 10h45 - 11h00 | P. Krüger (Chiba) : <i>All channels lead to Frascati</i>   | J. J. Rehr     |
| 11h00 - 11h15 | N. Perkins (Minneapolis) : <i>Mott physics with spin-orbit coupling and orbital degeneracy: how the ideas on V<sub>2</sub>O<sub>3</sub> lead to the development of a new field in 21st century</i> | J. J. Rehr     |
| 11h15 - 11h30 | Y. Joly (Grenoble) : <i>Fun with Resonant Diffraction</i>  | J. J. Rehr     |
| 11h30 - 11h45 | K. Palotás (Budapest) : <i>Screened KKR</i>  | J. J. Rehr     |
| 11h45 - 12h15 | C. Brouder (Paris) : <i>Relativistic effects and gauge invariance in x-ray spectroscopy and scattering</i>   | J. J. Rehr     |
| 12h15 - 13h30 | Lunch break  |                |
| 13h30 - 14h00 | C. S. Fadley (Berkeley) : <i>Some new developments in the study of bulk materials and buried interfaces with photoemission, and some challenges for theory</i>                                     | N. Perkins     |
| 14h00 - 14h30 | J. J. Rehr (Seattle) : <i>Theory of inelastic losses and satellites in x-ray spectra</i>   | N. Perkins     |
| 14h30 - 15h00 | M. A. Van Hove (Hong-Kong) : <i>Large molecules on metal surfaces: from C<sub>60</sub> to molecular motors</i>   | N. Perkins     |
| 15h00 - 15h30 | H. Daimon (Nara) : <i>3D atomic structure analysis around local active atoms by two-dimensional photoelectron diffraction and holography</i>   | N. Perkins     |
| 15h30 - 15h45 | Coffee break   |                |
| 15h45 - 16h00 | H. Ebert (Munich) : <i>Relativistic multiple scattering calculations in the full-potential mode</i>  | M. A. Van Hove |
| 16h00 - 16h15 | R. Zeller (Jülich) : <i>Precise large-scale density-functional calculations</i>  | M. A. Van Hove |
| 16h15 - 16h30 | P. Sainctavit (Paris) : <i>Quantum tunnelling of magnetization and Single Molecule Magnets</i>   | M. A. Van Hove |
| 16h30 - 16h45 | A. Marcelli (Frascati) : <i>From the MS ideas to the experimental determination of a three-body correlation function using XAS</i>   | M. A. Van Hove |
| 16h45 - 17h00 | G. Stefani (Rome) : <i>Do pairs of electrons diffract as a whole</i>   | M. A. Van Hove |
| 17h00 - 17h15 | O. Šipr (Prague) : <i>Influence of spin-orbit coupling on the magnetic dipole term Tz</i>  | H. Daimon      |
| 17h15 - 17h30 | J. García (Zaragoza) : <i>Local Geometry by XAS and RXS</i>  | H. Daimon      |
| 17h30 - 17h45 | T. Fujikawa (Chiba) : <i>Theory of pump-probe ultrafast XPS</i>  | H. Daimon      |
| 17h45 - 18h00 | M. Pedio (Trieste) : <i>Full Multiple Scattering applied to XAS of molecular solids</i>  | H. Daimon      |
| 18h00 - 18h15 | J. Minár (Munich/Plzeň) : <i>Multiple scattering meets correlations</i>  | H. Daimon      |
| 18h15 - 18h30 | Conclusion : C. R. Natoli  |                |

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|---------------|--|--|
| 19h30 - 23h30 | Conference dinner : garden party in Montru |  |
|---------------|--|--|