

**Final Programme - EuroConference on  
ADVANCED DIAGNOSTICS  
FOR MAGNETIC AND INERTIAL FUSION  
Villa Monastero, Varenna, Italy, September 3 - 7, 2001**

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## Day by day programme

### Monday, 3 September

09.00	<i>Welcome &amp; Introduction</i>
09.30	Alan Costley
10.00	Denis Juraszek
11.00	Nobuhiko Izumi
11.30	Peter Norreys
12.00	Jan Källne
15.00	Kenneth Young
15.30	Richard Petrasso
16.00	Discussion
17.00 - 18.30	<b>Posters A</b>

### Tuesday, 4 September

09.00	Anthony Leonard
09.30	Roger Reichle
10.00	Yoshinori Kusama
11.00	Marco Borghesi
11.30	Christian Stoeckl
12.00	Yoneyoshi Kitagawa
15.00	Jean Claude Gauthier
15.30	Joaquin Sanchez
17.00 - 18.30	<i>Special discussion session on JET-EP diagnostics</i>

### Wednesday, 5 September

09.00	Yefim Aglitskiy
09.30	Günter Bertschinger
10.00	David Bradley
11.00	Leonid Shmaenok
11.30	David Hoarty
12.00	Alexander Medvedev
15.00	Siegfried Glenzer
15.30	Henrik Bindslev
16.00	Discussion
17.00 - 18.30	<b>Posters B</b>

## **Thursday, 6 September**

09.30 Shigeru Sudo  
10.00 Yuri Goltsov  
11.00 Jean-Luc Bourgade  
11.30 Charles Skinner  
12.00 Vladimir Voitsenya  
15.00 Ramon Leeper  
15.30 George McKee

16.00 Discussion

17.00 -18.30 **Posters C**

## **Friday, 7 September**

9.00 Francesco Volpe  
09.30 Robert Keck  
10.00 Boris Sharkov  
11.00 Hiroshi Azechi (reported by Nobuhiko Izumi)  
11.30 Neville Luhmann  
  
12.00 *Final discussion*

## POSTER SESSION A

- A1 A. Hjalmarsson et al, *The 2.5-MeV neutron time-of-flight spectrometer for optimized count rate (TOFOR)*
- A2 S. Forsberg et al, *Neutron emission profile measurements with restricted camera sight lines at ITER-FEAT*
- A3 G. Ericsson et al, *The magnetic proton recoil spectrometer upgrade (MPRu)*
- A4 L. Giacomelli et al, *Projected neutron emission spectroscopy diagnosis of JET-EP deuterium plasmas*
- A5 A.V. Krasilnikov et al, *Natural diamond detector spectrometers for magnetic and inertial confinement fusion*
- A6 V. Kiptily et al, *Gamma ray measurements at JET and diagnostic development*
- A7 P.D. Morgan et al, *Helium partial pressure measurements using a penning gauge: a new approach*
- A8 P.D. Morgan et al, *Line ratio method for poloidal magnetic field measurement using Li-multiplet ( $2^2S$ - $2^2P$ ) emission*
- A9 C. Gowers et al, *High Resolution Thomson Scattering on JET – an Assessment of the Feasibility*
- A10 R. Pasqualotto et al, *High resolution Thomson scattering for JET*
- A11 B. Kurzan et al, *Determination of the electron density and mean energy for anisotropic velocity distributions by Thomson scattering*
- A12 M.G.o'Mullane et al, *Diagnostics based on helium neutral beams in ITER*
- A13 S.Tugarinov et al, *Conceptual design of the CXRS system for ITER-FEAT*
- A14 G. Vayakis et al, *The ITER magnetic diagnostic set design*
- A15 R. Reichle et al, *Radiation hardness test of mica bolometers for ITER in JMTR*
- A16 K.Yu. Vukolov et al, *Experimental study of first mirror degradation under influence of ITER relevant conditions*
- A17 C. Laviron, *Strategy of the Tore Supra Diagnostic Set for Steady-State High Power Operation*
- A18 A.W. Morris, *Diagnostic developments for the MAST spherical tokamak*
- A19 N. Luhmann et al, *Diagnosis of ST Plasmas on NSTX – Challenges and Opportunities*

## POSTER SESSION B

- B1 N.J.Conway et al, *Integrated spectroscopic edge diagnostics on COMPASS-D*
- B2 M. von Hellermann et al, *Steady-state Low-Z Transport Experiments at TEXTOR-94 and Recent Progress in Charge Exchange Spectroscopy*
- B3 J. Hobirk, *Current profile measurements via motional Stark effect*
- B4 R.L. Boivin et al, *High resolution measurements of neutral density and ionization rate in the Alcator C-Mod Tokamak*

- B5** M. Tournianski et al, *Use of a 1D Da camera to measure edge neutral and electron densities evolutions*
- B6** T.L. Rhodes et al, *High and Low Wavenumber Fluctuation Diagnostic System for the DIII-D Tokamak*
- B7** D. Thomas, *Utilization of Lithium beam polarimetry for edge current determination on DIII-D*
- B8** M. Pergament, *Advanced diagnostics for laser plasma interaction physics*
- B9** J. Seely et al, *X-Ray Spectroscopy and Calibrations in the 50 eV to 60 keV Range*
- B10** A.V. Bessarab et al, *X-ray field asymmetry effect on the time of neutron generation in experiments with indirect drive targets*
- B11** J. Vierne et al, *X-ray damage prediction of materials and debris generation in the near target vicinity in high fusion yield shots*
- B12** W. Seka et al, *Laser-Plasma Interaction Diagnostics for ICF Fusion Research*
- B13** M. Houry et al, *A new diagnostic design to achieve neutron spectroscopy in a high gamma background on ICF experiments*
- B14** D. Batani et al, *Interaction of soft X-ray thermal radiation with foam layered targets*

### **POSTER SESSION C**

- C1** D.L. Brower et al, *Interior Magnetic Field Fluctuation and Profile Measurements on the MST Reversed-Field Pinch*
- C2** D.J. Den Hartog et al, *Innovative neutral beam based diagnostics on the MST reversed-field pinch*
- C3** T. Bindemann, *Robust line-density measurements at W7-AS using a Cotton-Mouton polarimeter*
- C4** L. Giannone et al, *Bolometry in the W7-AS Stellarator*
- C5** H.J. Hartfuss et al, *Diagnostic System for the W7-X Stellarator*
- C6** S. Klose et al, *X-ray multicamera tomography system of W7-AS*
- C7** A. Werner et al, *Fast ion loss diagnostics for the Wendelstein 7 X Stellarator*
- C8** M Sasao et al, *Escaping Energetic Ion Measurement on Large Scale Magnetic Fusion Devices*
- C9** M. Sasao et al, *Measurement of High Energy Proton Temperature in LH*
- C10** T. Ozaki et al, *Spatial distribution measurement of high energy particles using time of flight neutron energy analysers in LHD*
- C11** L.I. Krupnik, *Recent development of the Heavy Ion Beam Probing diagnostic for existing and future fusion facilities*
- C12** D.H.H. Hoffmann et al, *Plasma Physics with Intense Ion and Laser Beams to Investigate Properties of Matter under the Conditions of Extreme Energy Density*

## Invited Oral Presentations

*X-ray imaging diagnostics for inertial confinement fusion experiments* - Yefim Aglitskiy (Science Applications International Corporation and NRL Washington USA)

*Rayleigh Taylor and laser imprinting diagnostics* - Hiroshi Azechi (Institute of Laser Engineering Osaka University Japan), reported by Nobuhiko Izumi

*High spectral resolution X-ray imaging crystal spectrometer for tokamaks and stellarators* - Günter Bertschinger (Institut für Plasmaphysik Jülich Germany)

*Fast ion dynamics measured by collective Thomson scattering* - Henrik Bindslev (FOM Instituut voor Plasmafysica-Rijnhuizen Nieuwegein The Netherlands and Risø National Laboratory Denmark)

*Imaging of plasmas using proton beams generated by ultra-intense laser pulses* - Marco Borghesi (The Queen's University of Belfast UK)

*New constraints for plasma diagnostics development due to the harsh environment of MJ class lasers* - Jean-Luc Bourgade CEA (Bruyères le Châtel France)

*Advances in gated X-ray imaging* - David Bradley (LLNL USA)

*Diagnostic requirements and issues for next step burning plasma experiments* - Alan Costley (ITER Joint Central Team Naka Japan)

*Frequency-domain interferometry for ultra-intense laser-plasma diagnostics* - Jean Claude Gauthier (LULI Ecole Polytechnique France)

*Thomson scattering in ICF* - Siegfried Glenzer (LLNL USA)

*Plasma Diagnostics in Interaction of Powerful Laser Pulses with Inhomogeneous Low-Density Media* - A.Yu. Goltsov (TRINITI, Russia)

*Absorption and fluorescence spectroscopy to study laser driven experiments* - David Hoarty (AWE United Kingdom)

*Neutron diagnostics for ICF* - Nobuhiko Izumi (LLNL USA)

*Introduction to diagnostic requirements for ICF* - Denis Juraszek (CEA France)

*Neutron diagnostic measurements in magnetic confinement experiments* – Jan Källne (Uppsala University Sweden)

*Laser and X-ray irradiation diagnostics that have paved the path towards significantly improved ICF target performance* - Robert Keck (Laboratory for Laser Energetics University of Rochester USA)

*Diagnostics of fast ignition experiments* - Yoneyoshi Kitagawa (Institute of Laser Engineering Osaka University Japan)

*Requirements for diagnostics in controlling advanced tokamak modes* - Yoshinori Kusama (JAERI Japan)

*Target diagnostic system for Sandia National Laboratories' Z Facility* - Ramon Leeper (Sandia National Laboratory Albuquerque USA)

*Diagnostic requirements for divertor physics* - Anthony Leonard (General Atomics San Diego USA)

*Recent progress in microwave imaging diagnostics* - Neville Luhmann (UC Davis USA)

*Turbulence measurement and analysis: scientific issues and developments* - George McKee (University of Wisconsin Madison USA)

*Charge exchange measurements*, Alexander Medvedev (KIAE, Russia)

*Advanced concepts in fast ignition and the relevant diagnostics* - Peter Norreys (Rutherford Laboratory UK)

*Charged particle diagnostics for current and future laser fusion experiments* - Richard Petrasso (MIT USA)

*Advances in thermal imaging* - Roger Reichle (CEA Cadarache France)

*Recent experience and future plans for JET diagnostics* - Joaquin Sanchez (CIEMAT Spain and JET UK)

*Diagnostics of dense plasmas generated by powerful heavy ion beams* - Boris Sharkov (ITEP Moscow)

*Ultra soft x-ray tomography for burning plasmas* - Leonid Shmaenok (Phystex Nieuwegein The Netherlands and A.F. Ioffe Institute Saint Petersburg Russia)

*Tritium issues in next step devices* - Charles Skinner (Princeton Plasma Physics Laboratory USA)

*Core mix diagnostics and results of OMEGA implosion experiments* - Christian Stoeckl (Laboratory for Laser Energetics University of Rochester USA)

*Diagnostics for helical system* - Shigeru Sudo (National Institute for Fusion Science Japan)

*First mirrors for next step diagnostics* - Vladimir Voitsenya (Kharkov Ukraine)

*Electron-Bernstein wave diagnostics* - Francesco Volpe (IPP Garching Germany)

*Alpha-particle measurements needed for burning plasma experiments* - Kenneth Young (Princeton Plasma Physics Laboratory USA)