



Contribution ID: 201

Type: Poster

EX/P8-05: Latest Progress in Studies of Runaway Electrons in JET

Friday, 12 October 2012 14:00 (4h 45m)

Latest disruption experiments in JET with carbon-fibre composite (CFC) in plasma facing components (PFC) have been carried out using either Massive Gas Injection or constant puff. These studies provided new data and further update of the database on disruption generated runaway electrons (RE). Temporal and spatial dynamics of RE beams have been studied using inverse reconstruction of the measured hard and soft X-rays emission during RE plateaux. Energy spectra of RE have been measured. Data is used in modelling of RE generation in the presence of spatial dynamics of current carrying channel and in simulations of interaction of RE beams with PFC in JET. First operations of JET with ITER-like Wall (ILW) showed that disruptions in new all-metal environment do not favour to runaway process. More than 10 times slower plasma current quenches that in experiments with CFC and electron temperatures about 100 eV have been measured. However, many RE generation events have been detected by HXR diagnostics during steady-state stages of discharges in JET with ILW. Modelling of the evolution of these discharges using simulation tool JETTO confirmed the possibility for significant RE generation.

Country or International Organization of Primary Author

Portugal

Collaboration (if applicable, e.g., International Tokamak Physics Activities)

JET-EFDA

Primary author: Mr PLYUSNIN, Vladislav V. (Portugal)

Co-authors: Ms FERNANDES, A. (Instituto de Plasmas e Fusão Nuclear, Associação EURATOM-IST, Instituto Superior Tecnico, Lisboa, Portugal); Dr HUBER, A. (Institute for Energy Research - Plasma Physics, Forschungszentrum Juelich, Association EURATOM-FZJ, Trilateral Euregio Cluster, 52425 Juelich, Germany); Dr SHEVELEV, Alexandr (A.F. Ioffe Institute of the Russian Academy of Sciences, St Petersburg, 194021, Russia); Dr BAZYLEV, Boris (Karlsruhe Institute of Technology); Dr REUX, C. (CEA, IRFM, F-13108 Saint-Paul-lez-Durance, France); Mr KHILKEVICH, E. (A.F. Ioffe Institute of the Russian Academy of Sciences, St Petersburg, 194021, Russia); Dr ARNOUX, G. (Euratom/CCFE Association, Culham Science Centre, Abingdon, Oxon, OX14 3DB, UK); Dr MLYNAR, J. (Association EURATOM/IPP.CR, IPP AS CR, CZ-18200 Prague, Czech Republic); Dr LEHNEN, M. (Institute for Energy Research - Plasma Physics, Forschungszentrum Juelich, Association EURATOM-FZJ, Trilateral Euregio Cluster, 52425 Juelich, Germany); Dr DE VRIES, Peter (FOM DIFFER); Dr PEREIRA, R.C. (Instituto de Plasmas e Fusão Nuclear, Associação EURATOM-IST, Instituto Superior Tecnico, Lisboa, Portugal); Dr JACHMICH, S. (Laboratoire de Physique des Plasmas-Laboratorium voor Plasmafysica, Association EURATOM-Belgian State, ERM/KMS, B-1000 Brussels, Belgium); Dr HENDER, T.C. (Euratom/CCFE Association, Culham Science Centre,

Abingdon, Oxon, OX14 3DB, UK); Dr KRUEZI, U. (Institute for Energy Research - Plasma Physics, Forschungszentrum Juelich, Association EURATOM-FZJ, Trilateral Euregio Cluster, 52425 Juelich, Germany); Dr RICCARDO, V. (Euratom/CCFE Association, Culham Science Centre, Abingdon, Oxon, OX14 3DB, UK); Dr KIPTILY, Vasili (Euratom/CCFE Association, Culham Science Centre, Abingdon, Oxon, OX14 3DB, UK)

Presenter: Mr PLYUSNIN, Vladislav V. (Portugal)

Session Classification: Poster: P8

Track Classification: EXS - Magnetic Confinement Experiments: Stability