



Contribution ID: 68

Type: **not specified**

Equilibrium evaluation for OP1.2a Wendelstein 7-X experiment programs

Monday, 17 September 2018 11:00 (2 hours)

Wendelstein 7-X (W7-X) is a modular advanced stellarator, which successfully went into operation in December 2015 at the Max-Planck-Institut für Plasmaphysik in Greifswald, Germany and continued to thrive at the experimental campaign OP1.2a (August-December 2017). The term modular stellarator refers to a generalized stellarator configuration with nested magnetic surfaces created by a system of toroidally discrete coils, providing both toroidal and poloidal field components, and designed with the aim to create optimum equilibrium properties. The optimization criteria included the high quality of vacuum magnetic surfaces, good finite beta equilibrium and MHD-stability properties as well as a substantial reduction of the neoclassical transport and bootstrap current in comparison to classical stellarators. The mission of the W7-X project is to demonstrate the reactor potential of the optimized stellarator line.

Equilibrium calculations are the basis for the mapping of various diagnostics in different poloidal planes

Co-authors: Dr ANDREEVA, Tamara (Max-Planck-Institut fuer Plasmaphysik); Dr BOZHENKOV, Sergey (Max-Planck-Institut fuer Plasmaphysik); Dr BRANDT, Christian (Max-Planck-Institut fuer Plasmaphysik); Dr ENDLER, Michael (Max-Planck-Institut fuer Plasmaphysik); Dr FUCHERT, Golo (Max-Planck-Institut fuer Plasmaphysik); Dr GEIGER, Joachim (Max-Planck-Institut fuer Plasmaphysik); Dr GRAHL, Michael (Max-Planck-Institut fuer Plasmaphysik); Dr KLINGER, Thomas (Max-Planck-Institut fuer Plasmaphysik); Dr KRYCHOWIAK, Maciej (Max-Planck-Institut fuer Plasmaphysik); Dr LANGENBERG, Andreas (Max-Planck-Institut fuer Plasmaphysik); Dr LAZERSON, Samuel (Princeton Plasma Physics Laboratory); Dr NEUNER, Ulrich (Max-Planck-Institut fuer Plasmaphysik); Dr PABLANT, Novimir (Princeton Plasma Physics Laboratory); Dr RAHBARNIA, Kian (Max-Planck-Institut fuer Plasmaphysik); Dr SCHILLING, Jonathan (Max-Planck-Institut fuer Plasmaphysik); Dr THOMSEN, Henning (Max-Planck-Institut fuer Plasmaphysik)

Presenter: Dr ANDREEVA, Tamara (Max-Planck-Institut fuer Plasmaphysik)

Session Classification: P1

Track Classification: Experimental Fusion Devices and Supporting Facilities