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NBI fast ion modelling of the LHD heliotron and W7-X stellarator with the ASCOT code

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The two leading helical confinement devices, Wendelstein 7-X (W7-X) and the Large Helical Device (LHD) use neutral beam injection (NBI) heating to produce fast ions. The ASCOT code is now equipped to model NBI ions in both devices.

The proposed contribution compares fusion rates and NBI wall loads in the two machines. Neutron rates are only measured in LHD, which started deuterium operation in 2017, while until now W7-X has been operated only with hydrogen plasmas. The assessment of fast ion wall loads focuses on W7-X, where wide-angle IR cameras provide a comprehensive coverage of the fast ion orbit losses to the walls.

Country or International Organization

Germany

Primary author: Dr ÄKÄSLOMPOLO, Simppa (Max Planck Institute for Plasma Physics)

Co-authors: WOLF, Robert (Max-Planck-Institute for Plasma Physics); BOZHENKOV, Sergey (Max-Planck--Institut für Plasmaphysik, Greifswald, Germany); SEKI, RYOSUKE (National Institute for Fusion Science); Prof. ISOBE, Mitsutaka (National Institute for Fusion Science); OGAWA, Kunihiro (National Institute for fusion science); SUZUKI, Yasuhiro (National Institute for Fusion Science)

Presenter: Dr ÄKÄSLOMPOLO, Simppa (Max Planck Institute for Plasma Physics)

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