

Hollow pellets for magnetic fusion

Tuesday 23 October 2018 08:30 (20 minutes)

Motivated by edge localized mode (ELM) control in H-mode plasmas, we summarize experimental and theoretical progress in MHD physics of plasma interaction with small pellets ranging from 10s of microns to a few mm in size. Layered spherical structures with a hollow core (“hollow pellets”) are attractive in comparison with solid spheres and gas puffing. Theoretical results based on multi-fluid calculations of pellet-induced cold plasmoid formation and interactions with background plasmas are given. The experimental results include a new dual-spectroscopy technique for imaging of ELMs and fabrication of prototype hollow pellets.

Country or International Organization

United States of America

Paper Number

FIP/P1-3

Author: Dr WANG, Zhehui (Los Alamos National Laboratory)

Co-authors: Dr HOLLMANN, Eric (University of California, San Diego, USA); Dr HU, Jiansheng (Institute of Plasma Physics, Chinese Academy of Sciences, China); Dr MENARD, Jonathan (Princeton Plasma Physics Laboratory); Dr HOFFBAUER, Mark (Los Alamos National Laboratory, USA); Dr MAINGI, Rajesh (Princeton Plasma Physics Laboratory); XU, Xueqiao (Lawrence Livermore National Laboratory); Dr WANG, Yu-min (Institute of Plasma Physics, Chinese Academy of Sciences, China)

Presenter: Dr WANG, Zhehui (Los Alamos National Laboratory)

Session Classification: P1 Posters

Track Classification: FIP - Fusion Engineering, Integration and Power Plant Design