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Florian Laggner, PhD

Diagnosing fusion plasmas: from concept to reality

Implementing LLAMA to measure the edge neutral density in DIII-D

FusionEP

Zoom meeting 82145836365 CE76265E

16:00 PRAGUE 3

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Title: Diagnosing fusion plasmas: from concept to reality Implementing LLAMA to measure the edge neutral density in DIII-D

Speaker: Florian Laggner, PhD

When: 2020-09-03 16:00:00

Abstract: The fundamental understanding of the behavior of fusion plasmas is based on sophisticated measurements that allow non-invasive diagnosis of certain parameters. This presentation outlines the path from the need to determine a certain quantity, to a conceptual measurement principle towards an actual implementation on a fusion device, using the example of the LLAMA diagnostic. LLAMA stands for Lyman-Alpha Measurement Apparatus, a multi-channel, bandpass filter pinhole camera system and has been recently installed at DIII-D. It measures the Lyman-Alpha brightness profiles at the plasma edge, enabling the inference of edge neutral density profiles to study sourcing of plasma particles. This opens a previously hardly accessible field of studies with specific importance when scaling towards large scale future fusion devices, where the sourcing from neutrals is expected to be drastically reduced.

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