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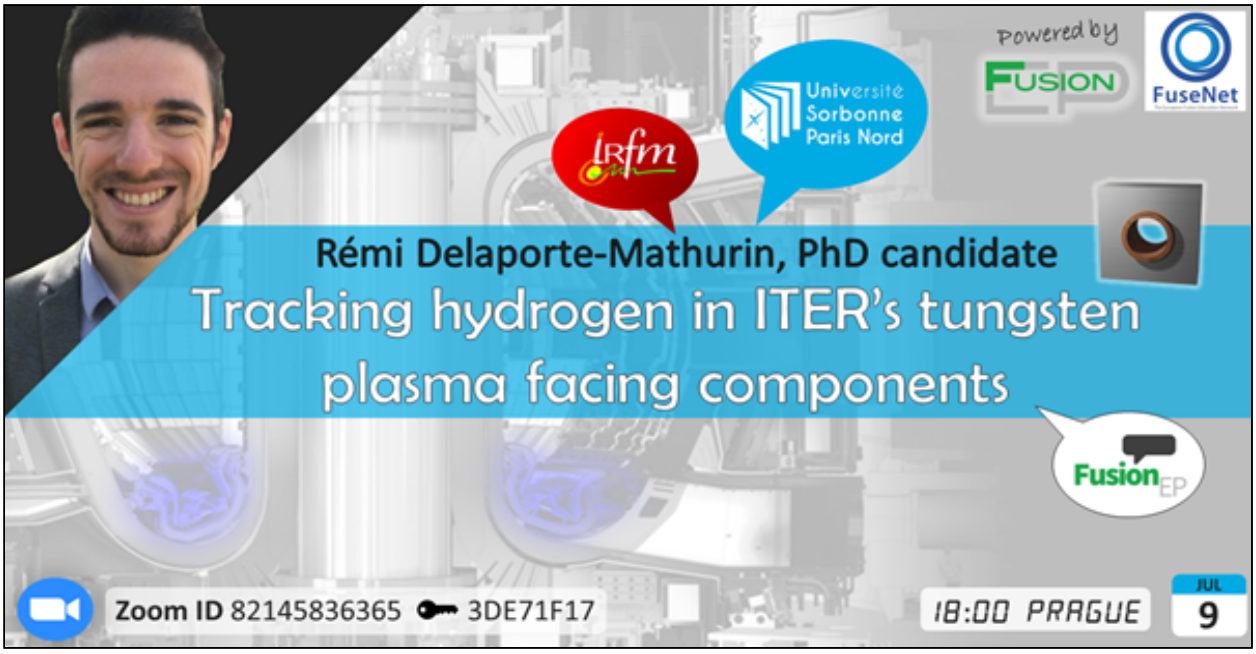

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Title: Tracking hydrogen in ITER's tungsten plasma facing components

Speaker: Remi Delaporte-Mathurin, PhD candidate

When: 2020-07-09 18:00:00

Abstract: Hydrogen is one of the key ingredients for fusion energy. During operations, tokamak walls are under bombardment of highly energetic hydrogen ions, which can penetrate the materials. Knowing the hydrogen content of these plasma-facing materials is crucial for several reasons. First from a safety point of view, the tritium content in the inner-vessel of the tokamak is limited to 700 g. Secondly, tritium penetrating the first wall material could reach the cooling system which must then be purified. Finally, hydrogen can brittle the materials and therefore reduce the lifetime of plasma facing components. The behaviour of hydrogen can be investigated by lab experiments but also simulated with thermokinetic models which is the topic of this talk. We'll present the finite element code FESTIM developed by CEA and CNRS. A particular focus is made on ITER divertor and tungsten monoblocks and hydrogen retention is estimated in the whole divertor.

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