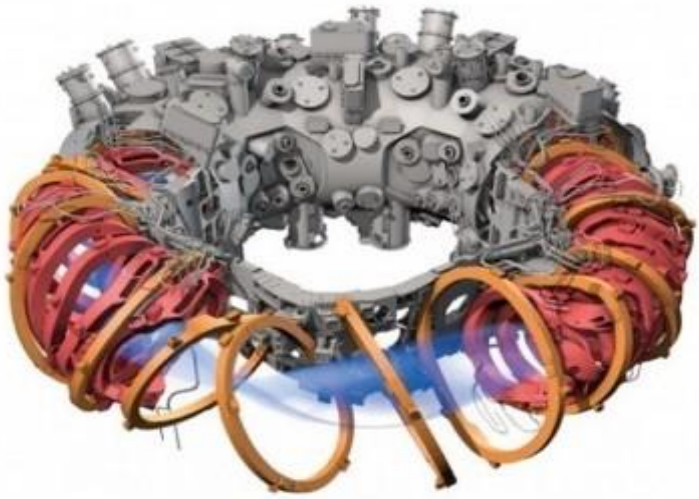
PHD. THESIS PROJECT

OPTIMIZATION OF STELLARATOR MAGNETIC CONFIGURATIONS



CONTRATO DE INVESTIGADOR PREDOCTORAL EN FORMACIÓN EN EL

LABORATORIO NACIONAL DE FUSIÓN, CIEMAT

In the next years, ITER, a magnetic confinement device of the tokamak type, is expected to prove the feasibility of nuclear fusion as a large-scale and carbon-free source of energy. In parallel, the succesful construction and first experimental campaigns of the optimized stellarator Wendelstein 7-X are demonstrating the viability of this type of magnetic confinement device as an alternative concept for a fusion commercial reactor.

Your research work will consist of searching for stellarator magnetic configurations with reactor-relevant plasma confinement properties, as well as feasible superconducting coils. For this purpose, you will employ the most advanced numerical stellarator optimization tools in high-performance supercomputers. This will be done in close collaboration with several researchers of the Laboratorio Nacional de Fusión and related international fusion laboratories. In doing so, you will become familiar with the cutting-edge theoretical developments —and with their experimental validation— needed to model and optimize the different aspects of stellarator physics.

For background information and additional project details, follow the link, or contact us:

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