

JT-60SA objectives, scientific programme and physics studies

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JT-60SA is a fully superconducting new tokamak device, designed, built and exploited jointly by Europe and Japan. It is the largest tokamak ever built before ITER and it is now in its commissioning phase. JT-60SA will exploit and extend the legacy both of JET and of the superconducting tokamaks presently in operation (WEST, EAST, KSTAR). It is expected to be at the forefront of the international fusion programme for many years, both before and during the D-T phase of ITER operation. The main missions of JT-60SA are: i) to support the ITER experimental programme as a satellite machine; ii) to pave the way to the next step of the international fusion programme, i.e., the demonstration fusion reactor (DEMO); iii) to promote the growth of a new generation of physicists and engineers who will exploit the next step fusion devices.

In this tutorial, the main characteristics of JT-60SA and the highlights of its scientific programme will be presented, with particular focus on the opportunities for physics studies and validation of theory and models that the machine will offer.