

## Verification of the Simulated Radiated Power of the ICRH Antenna Design for Wendelstein 7-X with Experimental Results using a Quarter Scale Mock-up Antenna (Paper TH/P6-60 J.Ongena et al.)

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- A design is under development for an ICRH antenna for the stellarator W7-X
- Main aim of this antenna is to produce a sufficiently large fast particle population that allows to demonstrate the potential of optimized stellarators to confine fast particles
- To check the validity of the design, a quarter scale mock-up of the full scale antenna has been built.
- To mimick the absorption by the plasma, a load is placed before this antenna consisting of dielectric material with a high dielectric constant : salted water and BaTiO<sub>3</sub>. **The latter material has been used for the first time as a dummy load** and has allowed a very close comparison with theoretical / numerical predictions.
- The impedance specifications of the full scale antenna can be reproduced on the reduced scale mock-up by using 4 times higher frequencies
- **The measurements confirm the predicted frequency dependence of the expected active power.** This provides enhanced confidence in the current design.