

IMPURITY ION  
DYNAMICS NEAR MAGNETIC ISLANDS  
IN THE DRIFT OPTIMIZED STELLARATOR  
CONFIGURATION OF WENDELSTEIN 7-X

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S u m m a r y

The radial transport of tungsten ions in a fusion plasma of a Wendelstein 7-X stellarator with five magnetic field periods is studied. The numerical code solves the guiding center equations for tungsten ions using the sixth-order Runge–Kutta method. The Coulomb scattering of tungsten ions is simulated by means of the Monte Carlo collision operator. The establishment of statistical properties of the ensemble of test particles is based on the calculation of the mean square displacement and the diffusion coefficient. It is shown that the existence of magnetic islands at the plasma periphery leads to the enhancement of the impurity transport.