

## Technical Overview and First Results of the Half-Size ITER NNBI Source (P3-B-450)

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IPP Garching is currently developing a RF driven negative ion source for the ITER neutral beam injection system as an alternative to the presently foreseen filamented source. The RF source has demonstrated the ITER requirements concerning negative ion current and electron/ion ratio at the required source pressure for small pulse length and small extraction area. The next goals are the extension to long pulses and large area sources at two further test facilities. The Half-Size source at the test bed RADI, recently commissioned at the IPP Garching, has roughly half the size of the ITER source. It is devoted to demonstrate the required plasma homogeneity of a large RF driven source, to test an ITER relevant RF circuit and to show the scalability of the IPP RF source. Having no large area extraction the source performance will be demonstrated with an extensive diagnostic and modeling program. This paper will present the results of the first plasma discharges and describe the main technical features of RADI.