

Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

The Negative Ion based Diagnostic Neutral Beam for ITER B. SCHUNKE, H. DECAMPS, M. DREMEL, R. HEMSWORTH, A. TANGA, ITER Organization, M. BANDYOPHADHYAY, B. BARUAH, A. CHAKRABORTY, C. ROTTI, S. SHAH, M. SINGH, N. SINGH, ITER India — The ITER dedicated Diagnostic Neutral Beam (DNB) is under construction. It is the basis for the Motional Stark Effect measurements at the ITER plasma edge and charge exchange spectroscopy. The DNB shares many features of the ITER Heating Neutral Beams (HNBs), but will operate only in hydrogen and inject ~ 2 MW of 100 keV of H^0 into the ITER plasmas. The same Cs seeded RF negative ion source is used as for the HNBs. The strong influence of the residual fields on the H^- and electrons in the accelerator has led to a new design of the magnetic filter in the ion source. Electron dumps consisting of parallel, vertical, cooled, plates between groups of beamlets immediately downstream of the accelerator prevent excessive electron power reaching the DNB cryopumps. The 4 channel gas neutralizer is made of cooled panels with special protection for the leading edges. Residual ions are deflected electrostatically onto cooled panels based on CuCrZr Heat Transfer Elements. A retractable calorimeter allows commissioning and beam profile measurements. It will be shown how imposed commonalities with the HNBs have influenced the design choices. The baseline DNB operating scenario and the engineering issues (lifetime, fatigue etc.), will be discussed.

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Date submitted: 20 Jul 2009

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