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Special Topic Article

Current Status and Prospects of Numerical Simulations of Astrophysical Plasmas

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Cover

In the NSTX machine (PPPL, USA) as shown in the cover, a peak plasma current up to 390 kA has been successfully generated by the Coaxial Helicity Injection (CHI) current drive method. The $\mathbf{E} \times \mathbf{B}$ plasma rotation (~ 20 km/s) with the $n = 1$ helical magnetic distortion has been observed. It was shown as the mechanism of CHI current drive that the rotating helical distortion carries the electron fluid into the closed flux region. (Masayoshi NAGATA *et al.*, Plasma and Fusion Research Vol.2, 035 (2007). <http://www.jspf.or.jp/PFR/>)



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