

Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Observation of Alfvén eigenmodes in reversed-field pinch plasmas

MATTEO ZUIN, SILVIA SPAGNOLO, ROBERTO CAVAZZANA, GIANLUCA DE MASI, EMILIO MARTINES, BARBARA MOMO, MONICA SPOLAORE, NICOLA VIANELLO, Consorzio RFX, Associazione EURATOM-ENEA sulla Fusione, Padova, Italy — High frequency (up to 1.5 MHz) Alfvén eigenmodes have been detected in the RFX-mod reversed-field pinch (RFP) device by means of insertable edge magnetic probes. The Alfvénic nature is deduced by the linear relation between the Alfvén velocity of the investigated plasmas and the measured frequencies. A wide range of experimental conditions have been explored in terms of plasma current (0.4-1.8 MA), electron density ($0.5-8 \times 10^{19} \text{ m}^{-3}$) and working gas (H and He). The coherent activity has been clearly observed on the parallel component of the magnetic field, which, at the edge of the RFP, is the poloidal one. Two distinct kinds of modes have been observed: the first consists of two modes together and continuously present during the discharges at two frequencies above 500 kHz; the second, at a lower frequency appears during the so-called Single Helical Axis states characterizing the high current discharges of RFX-mod.

Matteo Zuin
Consorzio RFX, Associazione EURATOM-ENEA
sulla Fusione, Padova, Italy

Date submitted: 23 Jul 2010

Electronic form version 1.4