

Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

A fast optical spectrometer for the spectroscopic diagnostic of RFX-mod. E. GAZZA, M. VALISA, B. ZANIOL, Consorzio RFX, Associazione Euratom-ENEA sulla Fusione, Padova, Italy — The detection of charge exchange radiation requires the use of spectrograph with very high performances, good imaging quality and high spectral resolution, especially in RFP devices where relatively low temperature and ion flow velocities have to be measured. To face the need of highly space and time resolved measurements of the relevant plasma parameters a new spectrograph has been installed on RFX-mod. This spectrograph, characterized by a Littrow mounting, has been designed ensuring a large effective aperture ($f/3$). As the emission region of interest in RFX-mod is in the visible range, the spectrometer is based on a large, high resolution plane reflecting grating, a long focal length photographic objective lens and a bi-dimensional back-illuminated CCD camera. The system can simultaneously record spectra along five poloidal or toroidal viewing chords using fiber optics with 1 mm diameter core. The main purpose of this spectrograph is to study the radial distribution of the plasma flow, of the ion temperature and of the impurity densities, with a time resolution lower than 5 ms. Preliminary results from the measurements of ion temperature and both poloidal and toroidal velocity will be presented.

Paolo Scarin
Consorzio RFX, Associazione Euratom-ENEA sulla Fusione, Padova, Italy

Date submitted: 20 Jul 2006

Electronic form version 1.4