

Abstract Submitted  
for the DPP19 Meeting of  
The American Physical Society

**Upgrades to the TCV Divertor Spectroscopy System** CHRISTOPHER DODSON, Swiss Plasma Center (SPC) Ecole Polytechnique Federale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland, LORENZO MARTINELLI, BASIL DUVAL, YANIS ANDREBE, HAMMAM ELAIAN, DAVID MORET, MIRKO WENSING, Swiss Plasma Center (SPC), Ecole Polytechnique Federale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland, KEVIN VERHAEGH, Culham Centre for Fusion Energy (CCFE), Culham Science Centre, Abingdon, Oxon, OX14 3DB, UK, THE TCV TEAM — The divertor spectroscopy system on the TCV tokamak resolves spectra in visible wavelengths for determining plasma properties such as density, temperature, and the rates of atomic and molecular processes. This diagnostic system is being upgraded to improve coverage, signal-to-noise ratio, spectral range, and operational flexibility for divertor detachment studies. The recent addition of baffles for neutral compression requires modifications to provide coverage of the divertor legs from the separatrix to the strike points. View chords will be added on a lower port to observe the inner divertor leg, and modifications to the horizontal port will enable increased angular coverage of the outer divertor leg. A third spectrometer will also be added to increase spectral coverage, and upgrades to the fiber-spectrometer coupling will enable quick selection of view chords between shots. Modifications of one of the spectrometers will improve the time resolution of a narrow spectral range for measurements of transient events such as ELM's and disruptions. This presentation will illustrate these upgrades and present results of synthetic diagnostic analysis used for the design.

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Date submitted: 10 Jul 2019

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