

Abstract Submitted
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Millimeter wave Diagnostic Capability on TCV¹ LAURIE PORTE, STEFANO ALBERTI, STEFANO CODA, BASIL DUVAL, MATTEO FONTANA, TIMOTHY GOODMAN, PEDRO MOLINA-CABRERA, Swiss Plasma Center Ecole Polytechnique Federale de Lausanne SB Station 13 CH-1015 Lausanne Switzerland, SPC TEAM — TCV has a large set of millimetre wave diagnostics. Two 24 channel ECE heterodyne radiometers have been installed. Each has a line of sight perpendicular to the toroidal magnetic field. One radiometer views from the high-field side (HFS) while the second views from the low-field-side (LFS). Each device has two mixers and local oscillators and their associated IF instrumentation and video detection. In addition, a six channel correlation ECE (CECE) radiometer has been installed for measuring electron temperature fluctuations. The CECE radiometer has a high gain antenna that can be rotated in both the toroidal and poloidal planes. All of the radiometers can be attached to a vertical line of sight allowing measurement of ECE signals generated by supra-thermal electrons. A millimetre-wave transmission diagnostic is being commissioned for the measurement of the absorption of the ECRH power. A 300 GHz interferometer has been installed. It is optimised for use at density below $4 \times 10^{19} \text{ m}^{-3}$. Finally, a short pulse reflectometer is being installed and Doppler backscattering measurements have been made. All of these diagnostic systems will be described and their potential use will be detailed.

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