

Z_{eff} measurement with Bremsstrahlung

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1. Objective

Radial profile of Z -effective from the Bremsstrahlung continuum emissivity measurement

2. Apparatus

2.1. Optical fiber array

- 44 fibers which covers a horizontally elongated plasma cross section.
- The absolute line-integrated intensity of the Bremsstrahlung continuum at 530 nm is measured by a visible spectrometer equipped with a CCD detector.
- Time resolution: 0.1ms

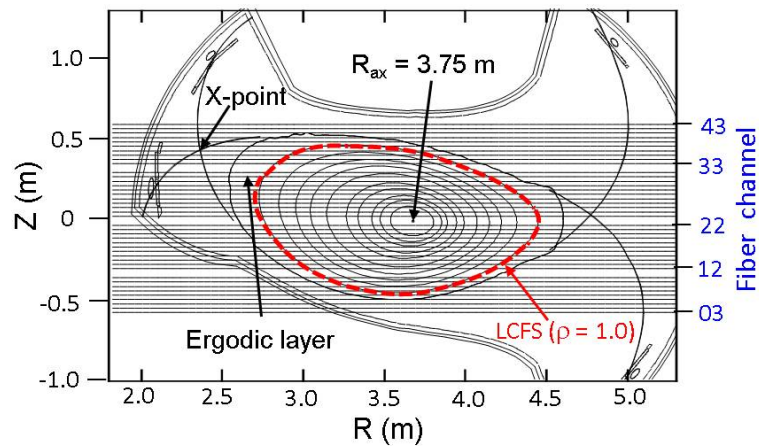


Fig. 1. Viewing chords for the Bremsstrahlung measurement

2.2. Port assembly

- The fiber array is installed on #10-O (Fig. 2)

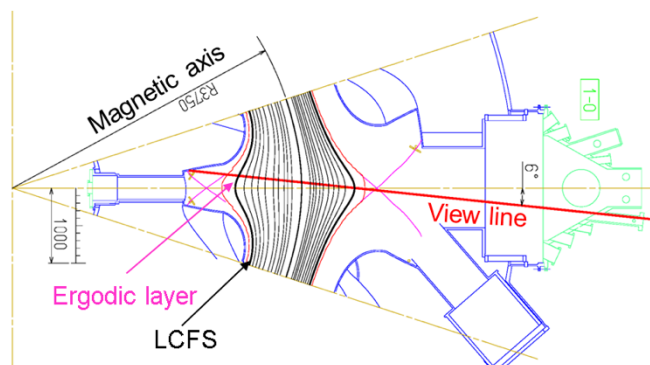


Fig. 2. Installed port location and upper view of the lines-of-sight.

3. Operation

- Before experiment: opening shutters and turning on power supply
- After experiment: closing shutters and turning off power supply

4. Remarks

- High-density operation produces better result.
- Example of data analysis (see Fig. 4)

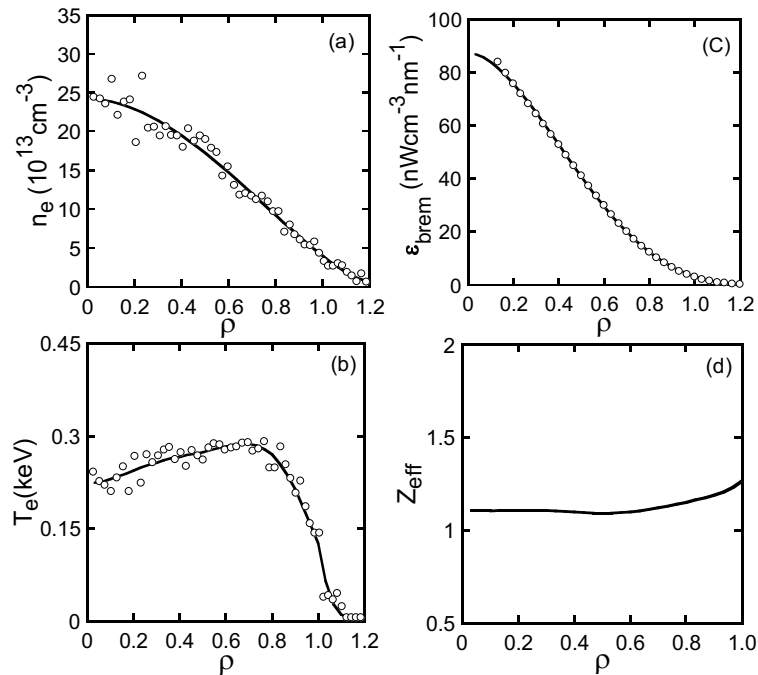


Fig. 3. Example of radial profiles of the Bremsstrahlung emissivity and the Z_{eff} .

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and others