**Motivation & Introduction**

The Direct-Brightness method applies the brightness ratio to tomographic reconstructions of emissivity:

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  \[ \frac{I_e}{I_e + I_T} \]

The Direct-Brightness ratio compares well to Thomson Scattering measured temperatures.

**Discussion**

- Temperature measurements are being investigated to form a quasi-single-helicity (QSH) or single-helical-axis (SHAx) state.

**Structure Measurements**

- Plasmas with helical magnetic structure can be investigated.

**Phases with helical magnetic structure can be investigated**

- In MGT, phases at high current and helical parameter tend to be in a remnant state, so the helical structure is re-introduced.
- Density and current perturbations have been observed with stochasticity and periodicity.
- Are there temperature structures associated with these magnetic structures?

**Background: Using SXR Bremsstrahlung Emission to Measure Electron Temperature**

- Double-Foil Technique Uses a Ratio to Calculate Te

\[ \frac{I_e}{I_e + I_T} = \frac{f_e(E) dE}{f_e(E) dE + f_T(E) dE} \]

\[ \frac{I_e}{I_e + I_T} = \frac{f_e(E) dE}{f_e(E) dE + f_T(E) dE} \]

Temperature measurements with the Direct-Brightness method are comparable to those measured with Thomson scattering.

- Spatial profiles from measurement and modeling are correlated.
- Correlation between measurement and modeling aids in understanding the connection between modeling and measurement.

**Structure Measurements**

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