# Automated analysis of turbulent electron temperature fluctuation measurements at ASDEX Upgrade

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Turbulent transport is known to reduce confinement times in tokamaks. The correlation electron cyclotron emission (CECE) diagnostic installed on the ASDEX Upgrade tokamak measures broadband, long-wavelength ($k_\theta \rho_s < 0.3$) electron temperature fluctuations, yielding insight into turbulence-driven transport. Analysis of CECE data is well-suited to automation under the right conditions. Such an automated analysis of CECE data must account for the presence of artifacts stemming from a variety of operating conditions that can obscure the actual temperature fluctuations. These artifacts can distort the profile of temperature fluctuations and impact the validity of the measurements. Here preliminary results of an automated, noise-filtering computational method for the analysis of CECE data are presented. The automated analysis is used to create a large experimental database of CECE analysis results, which will then be used for two follow-on applications. First, regression analysis is applied to the database in search of an empirical scaling relation that can accurately predict the saturated amplitude of ion-scale turbulent electron temperature fluctuations. Second, the analysis will aim towards a large-scale validation study of turbulent electron temperature fluctuation data from numerical computational models.

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