

Data Quality Monitoring for tokamak soft X-ray diagnostic system GEM-detector based

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Quality of data used for physics phenomena analysis is important topic regarding plasma diagnostics. The base data (e.g. raw signals) is used for further computation and generation of output products for physicists (e.g. soft X-ray spectra). When working on low-quality base data, side effects can influence the systems processing path resulting in malformed final products. The unwanted effects can also reduce the performance of the systems. Therefore, it is necessary to design the diagnostics systems that are capable to online monitor the quality of the data and filter-out low-quality data. The Data Quality Monitoring covers aspects of: hardware design, software design, processing algorithms, system, data-path and model approach to monitor data quality during the experiments. The lecture will cover following topics:

- Design of modern diagnostic system used at tokamak with important construction features
- Analysis of acquired signals
- Base data influence on output products
- Discussion about improving the quality of the data