**Bayesian probabilistic data analysis platform R&D on HL-2A**

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**Abstract**

Magnetic confinement fusion experiments generate large quantities of complex data. At a basic level, the data reflects the state of the machine and plasma, enabling a safe and reliable operation of the device, i.e. well within the design limits of the machine and compatible with the scientific goals of the experiment. Depending on the requirements, different analysis techniques are needed to extract as much useful information as possible from the raw data. Bayesian inference is used in many scientific areas as a conceptually well-founded data analysis framework. On HL-2A tokamak, a Bayesian probability theory-based data analysis platform has been initiatively developed, which applied on electron temperature and density profiles inference by using a set of several diagnostic systems, including electron cyclotron emission, Thomson scattering, refletometry and interferometry. In this paper, we will give a brief introduction of recent progress of data analysis platform R&D. The first integrated data analysis application on HL-2A experiment will also be discussed.