Contribution ID: **560** Type: **Poster**

Ion and Electron Temperature Predictions based on Thailand Tokamak Plasmas using CRONOS Code

Thursday 25 October 2018 14:00 (20 minutes)

This work uses CRONOS integrated predictive modelling code to simulate ion and electron temperatures of plasma scenarios based on a future Thailand tokamak. This small tokamak is planned to be installed at Thailand Institute of Nuclear Technology (TINT), under the collaboration of the Center for Plasma and Nuclear Fusion Technology (CPaF). The plasma transport includes both neoclassical, via NCLASS module, and anomalous transports, via Mixed Bohm/gyro-Bohm module. The boundary condition for the thermal transport equation is set at the top of the pedestal where pedestal temperature is calculated based on scaling law. No external heating is given in these simulations so the plasmas remain only in L-mode. A simple electron density profile is given for all simulations with central value around 10-19 m-3. Effects of both plasma current and toroidal magnetic field on ion and electron temperatures are investigated. It is found that central electron temperature ranges from 200 to 410 eV, whereas ion temperature ranges from 120 to 170 eV. Evidently, both temperatures are more sensitive on the change of plasma current than that of toroidal magnetic field.

Country or International Organization

Thailand

Paper Number

TH/P6-15

Author: Dr CHATTHONG, Boonyarit (Department of Physics, Faculty of Science, Prince of Songkla University)

Co-authors: Dr WISITSORASAK, Apiwat (King Mongkut's University of Technology Thonburi); Ms PROMPING, Jiraporn (Thailand Institute of Nuclear Technology); Dr SANGAROON, Siriyaporn (Mahasarakham University); Mr MAKMOOL, Thanaphan (Department of Physics, Faculty of Science, Prince of Songkla University); Dr ONJUN, thawatchai (Sirindhorn International Institute of Technology)

Presenter: Dr CHATTHONG, Boonyarit (Department of Physics, Faculty of Science, Prince of Songkla University)

Session Classification: P6 Posters