Seminar

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Institute for Plasma Research

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Title: Integrated Modelling & Analysis Suite (IMAS) - Let's start using it!

Speaker: Dr. Daniel Raju
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Date: 30th September 2025 (Tuesday)

Time: 03:00 PM

Venue: Seminar Hall, IPR

Abstract

Tokamak operation and experiments need verified and validated models for predicting the plasma response to actuators and its performance. Several simulation codes have already been developed by the fusion community for the Physics modelling of plasma equilibrium, transport, MHD stability, heating and current drive and fusion processes. The integration of these codes into flexible, verified and validated workflows has been the major focus in the fusion community which has led to the development of a framework, known as "ITER Integrated Modelling and Analysis Suite (IMAS)" based on the Interface Data Structure (IDS) for data standardization and code integration.

IMAS is an effective tool for facilitating the analysis of data across different tokamaks and the exchange of physics modules. IMAS also allows to validate various Physics models considering the plasma conditions and operational regimes and build confidence in predicting the operational scenarios of existing machines, ITER and other future devices. The extensive use of IMAS will also generate a database which can be exploited later for theoretical studies, model validation, advanced Machine Learning and Artificial Intelligence applications for the existing machines, ITER and future devices. As an ITER partner, we must take opportunity to learn about IMAS and utilize it for ADITYA-U, SST-1 and future devices.

This is an introductory talk about the IMAS so as to encourage the younger colleagues to come forward - make a Team to work with IMAS for achieving the aforementioned objectives.
