

# Seminar

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## Institute for Plasma Research

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**Title :** Equilibrium studies using IPREQ code and MHD simulations using the CUTIE code in ADITYA-U tokamak

**Speaker:** Dr. Jervis Ritesh Mendonca  
Institute for Plasma Research, Gandhinagar

**Date :** 14th February 2022 (Monday)

**Time :** 03.30 PM

**Venue :** Online - Join the talk:

[https://meet.ipr.res.in/PDF\\_Extension\\_Talk\\_Jervis\\_Ritesh\\_Mendonca](https://meet.ipr.res.in/PDF_Extension_Talk_Jervis_Ritesh_Mendonca)

### **Abstract :**

The equilibrium reconstruction of ADITYA-U plasmas is attempted using the IPREQ code. The IPREQ code has been installed and few modifications are carried out in order to adapt it for the ADITYA-U data such as Data smoothing, integration of Mirnov data specifying boundary conditions and fitting profiles from the experimental data etc. The Mirnov coil signals are simulated first using IPREQ and then matched with those measured with Mirnov Coils in ADITYA-U plasmas. The plasma parameters in the simulations are iterated to obtain a good match between the two. After obtaining a sample equilibrium for an ADITYA shot, equilibria for several ADITYA/ADITYA-U shots have been carried out. Presently, the real time execution of the IPREQ code is under progress in order to run the code with minimal manual intervention. Apart from the above, the MHD simulations using the CUTIE code for the parametric regime of ADITYA is continued. A qualitative agreement between the simulated results and the experimental observations of stabilization of tearing modes with increased plasma rotation has been observed.

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