

ICTS Seminar

Title : Understanding the formation of jet streams and storms on Saturn and Jupiter using 3D convection simulations

Speaker : Rakesh K. Yadav, Harvard University, USA

Date : Friday, 12th February 2021

Time : 09:30 am (IST)

Abstract : Decades of observations have painted a rich picture of the atmosphere of Saturn and Jupiter. Both planets have jet streams which circulate unabated around the entire planet, along with numerous storms which could be even larger than the Earth. All these features are striking examples of turbulent self-organization of fluid flows. However, the exact physics behind the formation of these features is still uncertain. Using three simulation cases, I will discuss how rotating convection may form such features: The first simulation shows how rotating convection spontaneously forms jet streams with polygonal shapes, helping to shed light on how Saturn's famous hexagonal jet forms; The second generates several alternating jet streams, as well as numerous storms, similar to what we see on Jupiter; And, the third demonstrates how gigantic storms may form on these planets. I will discuss what we can learn from these cases about the fluid dynamics of Saturn and Jupiter.

Venue : Please click on the below link to join the seminar

<https://zoom.us/j/99005492716?pwd=aE5OYTBTYytJRzBPODhCNHZRbnEzUT09>

Meeting ID: 990 0549 2716

Passcode: 077566