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Entitled

MEASURING JUPITER'S WIND FROM CASSINI SPACECRAFT OBSERVATIONS

by

Malak Ali Nazmi Hamed

Faculty Advisor

Dr. Roland Young, Department of Physics

College of Science

Date & Venue

9:30 a.m

Friday, 10 Nov 2023

Room 238, F3 Building

ZOOM details

<https://uae-u-ac-ae.zoom.us/j/84338958899?pwd=fMgDMRoaTNirzFgZexPBn3mKbuxbPJ.1>

Meeting ID: 843 3895 8899

Password: 445013

Abstract

The Jupiter's atmosphere has remarkable features like Great Red Spot, and strong dynamic events takes place on its atmosphere for hundreds of years.

We have a set 280 images of Cassini spacecraft December 2000 of southern and northern hemisphere of Jupiter planet which were taken by four distinct filters with a wide range of wavelengths extending from 455 nm to 889 nm to study the Great Red Spot dynamics and measure the velocity fields using Correlation Imaging Velocimetry technique. To understand the mechanism of energy transfer between eddies and jets which governs the Jupiter's atmosphere for a long time, it requires to analyze the interplay between zonal winds and eddies of its atmosphere. This study uses to plot latitudinal profiles versus $\overline{u'v'}$ and $d\overline{u}/dy$ to find a positive correlation which implies that the energy mechanism takes place from eddies to zonal flow.

Keywords: Jupiter, Zonal jet, Eddy Momentum Flux, Zones and Belts, Great Red Spot, Correlation Imaging Velocimetry, Imaging Science Subsystem.