

Review Form 3

Journal Name:	International Astronomy and Astrophysics Research Journal
Manuscript Number:	Ms_IAARJ_128761
Title of the Manuscript:	A new look at the Great Red Spot of Jupiter
Type of the Article	Original Research Article

PART 1: Comments

	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.	This manuscript presents a novel approach to understanding the Great Red Spot (GRS) of Jupiter by applying terrestrial ocean circulation models to planetary atmospheres. The work is an innovative attempt to link Earth-based fluid dynamics theories with planetary phenomena, proposing that the GRS may be a topographic feature driven by vertical velocity. While speculative, this research provides a platform for interdisciplinary discussion between planetary science and oceanography. However, it lacks sufficient grounding in observational data and established atmospheric dynamics of gas giants.	
Is the title of the article suitable? (If not please suggest an alternative title)	Yes, the title is relevant to the study, but it could be improved for clarity and focus. Suggested alternative: "A Topographic Perspective on Jupiter's Great Red Spot: Insights from Ocean Circulation Models"	
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	The abstract covers the central hypothesis and theoretical approach but lacks clarity and specificity in several areas: -Add a concise mention of the role of vertical velocity (w_{0w_0w0}) in shaping the proposed topography. -The comparison with Earth's oceans is compelling but requires a clearer distinction between the two planetary contexts. Suggested Revision: The abstract should briefly state how the proposed model aligns or diverges from existing interpretations of the GRS as an anticyclonic vortex. Highlight the implications of the findings for planetary atmospheric dynamics.	
Is the manuscript scientifically, correct? Please write here.	The manuscript is mathematically rigorous within the assumptions made but fails to address critical physical and observational constraints: -The assumption of a well-defined "surface" on Jupiter and an analogy to Earth's oceans is oversimplified. -Observational data, such as vertical wind profiles, thermal emissions, and cloud structure, are not used to validate the theory. -Established models of the GRS as a high-pressure storm driven by zonal jets and deep convection are insufficiently discussed. Recommendation: Strengthen the physical basis by addressing Jupiter's atmospheric structure and integrating observational constraints.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	The references include foundational works (e.g., Stommel 1948) and recent studies, but they are insufficiently comprehensive. For example: -Include recent results from NASA's Juno mission , which provides high-resolution data on Jupiter's atmosphere. -Consider adding references on vortex stability in planetary atmospheres, such as studies by Marcus et	

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	al. on GRS dynamics.	
Is the language/English quality of the article suitable for scholarly communications?	<p>The language is mostly suitable but contains several areas of awkward phrasing, inconsistent terminology, and minor grammatical errors. Examples include:</p> <ul style="list-style-type: none"> -Replace "deceases outwards" with "deceases outward." -Original: "This can also be interpreted using (2), which for a meridional solution is independent of Ox, and reduces to..." Suggested: "This can also be interpreted using equation (2), which, for a meridional solution, is independent of the x-coordinate and reduces to..." -Original: "...in which from (7), $v = 2/3$ wo y /H..." Suggested: "...in which, from -Original: "Hence on substituting for v from (7) in (8), we obtain," Suggested: "Hence, by substituting v from (7) into (8), we obtain:" <p>Minor typo in references: "Read, P.I. 2024 The dynamics of Jupiter's snd Saturn's Weather Layers..." Change "snd" to "and."</p> <p>-Ensure all references follow a consistent format (e.g., adding a period after initials, consistent spacing, etc.).</p> <p>Recommendation: Proofread for grammatical consistency and clarify technical terms.</p>	
Optional/General comments	<p>Suggest reframing the conclusion to present the study as a conceptual hypothesis rather than a definitive explanation.</p> <p><i>No ethical issues were identified.</i></p>	

PART 2:

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

Reviewer Details:

Name:	Jesse Daniel Brown
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