

Review of the Revised Manuscript:

1. Language and Presentation:

The revised manuscript has shown significant improvements in terms of language and clarity. The content is structured coherently, and the language is refined. The previously identified issues, where well-articulated sections were interspersed with less clear segments, have been effectively addressed. The manuscript now maintains a consistent and polished writing style, enhancing its overall readability.

2. Contextual Framework and Motivation:

The manuscript has made commendable strides in establishing its context and motivation. By referencing seminal works, it provides a robust backdrop for the study, emphasizing the importance of electromagnetic Rossby-Khantadze waves in ionospheric research. This revision has successfully addressed prior concerns, offering a richer background and highlighting the research's significance.

3. Mathematical Exploration:

The manuscript delves deeply into the mathematical aspects, particularly focusing on the modified KdV (mKdV) equation and its solitary wave solution. The discussion around the derived MKdV equation and its association with quadratic nonlinearity is noteworthy. However, the manuscript could benefit from a more detailed exploration of the vanishing quadratic nonlinearity and the potential interplay of both quadratic and cubic nonlinearities in a perturbed system. A clear, step-by-step justification for these mathematical nuances would elevate the manuscript's quality.

4. Emphasis on mKdV Equation:

While the manuscript acknowledges the mKdV equation, citing works like Kaladze et al. (2009) and Jian et al. (2009), it falls short in emphasizing its nature as an exactly solvable equation with diverse solution methods. The authors' inclination towards the soliton-like solution is evident, but a clear rationale for this choice over other potential solutions is missing.

5. Significance of Discussed Waves:

The manuscript underscores the importance of the discussed waves, particularly highlighting their zonal type and relevance during specific atmospheric events. These waves provide valuable insights into the ionosphere's large-scale processes and dynamics. However, the manuscript could delve deeper into the scales of these solitary waves and their overarching significance.

Recommendations:

To further enhance the manuscript, it's crucial to provide a comprehensive exploration of the mathematical nuances, especially around the mKdV equation, and to delve deeper into the significance of the discussed waves. Addressing these aspects will ensure a holistic understanding and elevate the manuscript's academic standing.