

Interactive comment on “Nonlinear vortex solution for perturbations in the Earth’s Ionosphere” by Miroslava Vukcevic and Luka Č. Popović

Anonymous Referee #2

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This paper presents a theoretical study of small-scale ionospheric perturbations. The authors derive conditions for nonlinear soliton waves in the ionosphere using the MHD description and Poisson’s equation. This might be a useful theoretical practice, however, it is unclear how the study can be applied to address outstanding science questions in ionospheric physics. In the conclusion section, the authors present some discussion of solitary structures in different ionosphere layers. Are there any observations of solitary structures in the ionosphere? Observational evidence would be good to mention. In addition, major drivers of the ionosphere, including the solar irradiance, space weather conditions, and lower atmospheric forcing are not considered in the study at all. The electrodynamic effect in the ionosphere is not included either.

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