



SDI Review Form 1.6

Journal Name:	<u>Physical Science International Journal</u>
Manuscript Number:	Ms_PSIJ_67244
Title of the Manuscript:	A study on instabilities and nonlinear wave energy exchange process in Terrestrial Ionospheric Plasma
Type of the Article	Minireview Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<http://www.sciencedomain.org/journal/10/editorial-policy>)



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PART 1: Review Comments

	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)
Compulsory REVISION comments	<p>This manuscript drops in the research topic of Earth's ionospheric plasma. More specifically, the present mini-review article focuses on the plasma instabilities and non-linear wave-energy exchange within Earth's ionosphere. The topic (including e.g. other planets' ionosphere) is of current interest. The theoretical methods of studying ionospheric plasmas are based on the same governing differential equations (Vlasov-Poisson system, Maxwell's equations, etc.) with those applied to thermonuclear plasma, astrophysical plasma, etc. Of course, the scale of the main parameters and the other details could be different, but one field may be inspired from the other and vice versa.</p> <p>In the present version of their article, author(s) made an effort to summarize in brief the progress made, through the recent ground and satellite based observatories, in the field of non-linear effects and instabilities of plasma waves. The explanation of observations in the context of theories of non-linear weak turbulence interaction with the wave/particles, etc., it sounds. This holds in particular for the wave-energy exchange process between resonant and non-resonant plasma waves.</p> <p>The article, however, looks rather incomplete, though the description of the state of the art of the field and the documentation (in the Introduction) as well as the mathematical formulation of the method are rather well written. In order to help author(s) to improve their article I suggest them to make at least the following improvements:</p> <ol style="list-style-type: none"> 1) Include in the discussion some more relevant (recent) Earth and satellite observations by mentioning the main aim and main findings of their operation. 2) The discussion of the results is very short and without any Table(s) or Figure(s). In review articles, what is not permitted is the publication of new (unpublished) results, but author(s) may include already published results. In improving the Section "Discussion", author(s) may distinguish subsections, if they wish, by discussing separately results analysed via (i) linear or non-linear theories and/or (ii) resonant or non-resonant plasma waves, (iii) observational data of different regions of the Earth's ionosphere, etc. 3) A "Summary, Conclusions and Outlook" Section, is completely missing in the article. This is a necessary Section of the article. Please, include it (involving 2-3 paragraphs). <p>Minor Changes:</p> <ul style="list-style-type: none"> – In the Abstract, and in other place(s) where necessary, improve phrases like: "In this paper it has been presented a brief overview" with the "In this paper we present a brief overview" or "... we review rather briefly..." – Change head title of Sect. 2, to a new one, for example: "Description of non-linear (properties of) Vlasov plasma", or something similar. – Divide in two the 6th paragraph of Introduction (I propose the starting/end of the new paragraph to be: "In Space Physics, plasma maser in Tokomak plasma". – Check vector symbols and correct Eqs. (1) – (4). Also, the labelling in parenthesis of these equations should be included in few-lines text just below each of them by phrasing, 	



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	<p>in addition, the clear role in the theory of each of these equations. – A detailed check of the punctuation throughout the text is required. Please, author(s) and Journal proofreaders, provide/correct punctuation appropriately. – In general English language is good but several (some of them rather serious) grammatical errors/mistakes, typos should be corrected.</p>	
Minor REVISION comments		
Optional/General comments		

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:

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