

Interactive comment on “Model of Propagation of VLF Beams in the Waveguide Earth-Ionosphere. Principles of Tensor Impedance Method in Multilayered Gyrotropic Waveguides” by Yuriy Rapoport et al.

Anonymous Referee #2

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Many points need to be revised before the acceptance of this paper. The interesting goal in a model is to determine what are the main parameters for the increase/decrease of the EM field. Here in this paper we only have a variation of one parameter: the electron density. It means that you show something which is evident: when the density increases the electric field decreases. What is the effect of other parameters as the magnetic field inclination for example? The plasma frequency? Why the calculation is stopped at 80 km ? In Figure 4 why E_y is oscillating along Z ?

Minor points: The English is not fluent and there are many mistakes (or typos) which

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can be easily corrected with a word processor. - Page 3 line 21 To Be Corrected - Page 3 line 25 Wait (I have not checked the references but I have seen that Ruibie & Tolutue is not correct) - Page 4 line 10 waves - Page 4 line 11 LAIM appear before and then must be explained before - Legend of Figure 1 is too long. A part must be in the text (it is also true for other figures). - Of course I have not checked the correctness of all equations but I have seen an error in the first equation (equation (1)) for the ion plasma frequency - Page 6 line 5 and line 17 the sign inside $\exp()$ is different - Page 7 the values of $BETA_{ij}$ are not clear. What parameters they contain ? - Page 9 line 10 respectively two times - Page 9 line 15 relation - The matrix at the end of equation (14) seems strange. The left lower element is not $1-i$? - Page 13 another parameter DELTA appears here. Is the DELTA in equation (11) similar to the DELTA in equation (24) ? - Title 3.5 too long - Page 16 a lot of typos, discharges, demonstrating, speaking, present, presentation - Page 17 line 1 these - Page 17 line 9 why Figures 3_2 and 4_3 - In Figure 3 it is difficult to understand the contain of the panels b) to g) - Page 19 line 13 figure 5

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