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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 acceptation 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 Ey 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 BETAij 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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