

The dependences of the coupled oscillation on the ionospheric conductivity and m number

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Using the Finite element method, the eigen modes of the coupled oscillation are calculated. In this calculation, only the Pedersen conductivity is included in the ionospheric boundary condition of the standing toroidal mode oscillation. As the boundary condition of the cavity mode oscillation, on the contrary, it is supposed that its electric field is zero in the ionosphere. When the Pedersen conductivity and m number are small, the profile of the standing toroidal mode oscillation is free end mode in the ionosphere and that of the cavity mode oscillation is fixed end mode. When the m number is larger, however, both profiles are fixed end mode in the ionosphere.