Numerical representation of the auroral oval

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A numerical representation of the aurora oval has been developed as a function of IMF and solar wind velocity. Our approach is to relate the auroral oval distribution to the high-latitude potential model which is represented with IMF and solar wind velocity. The obtained model shows dynamic nature of the auroral oval. Results about the validity of the model for superstorms will be also presented.

Keywords: Auroral oval, modeling, solar wind, superstorm, geomagnetic index