

## Study on the connectivity of magnetic field in the context of magnetosphere-ionosphere coupling

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Algorithm for separation of magnetic fields observed on the ground owing to their origin is developed. This method enables to divide the poloidal magnetic field on the ground into field-aligned current (FAC) and/or ionospheric current origin. In this algorithm, oblique FAC and rotational part of ionospheric current become a source of poloidal magnetic field observed on the ground, while divergent part of ionospheric current is cut out from possible source of magnetic field below the ionosphere. We will discuss how this algorithm can be applied for data set of magnetic field observed on the ground and simulation results of ionospheric current in the context of magnetosphere-ionosphere coupling.