

## **Sandpile model analogy of the magnetosphere-ionosphere substorm activity**

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Observational studies of magnetospheric activity suggest that magnetosphere-ionosphere coupling plays a critical role in the physical processes leading up to substorm onset. The sandpile cell model as an analogy of the dynamic magnetosphere-ionosphere system related with the substorm activity is presented. To take into account the magnetosphere-ionosphere coupling we suppose that each cell in the model contains two connected parts, one of which may be associated with the magnetosphere current sheet pieces, and other – with ionosphere region at the same magnetic field line. The magnetospheric part of the system is organised as usual sandpile cell automation, however the ionospheric parts are driving the energy, which may be released by connected unstable magnetosphere cells. This ionosphere driving is supposed to depend on the cell history. Dynamics of the cell model for constant input parameters and for driving by real  $B_z$  IMF is discussed. It was found that the model demonstrates some features observed in the magnetosphere-ionosphere system.