



## **Atmospheric Lithosphere-Ionosphere Charge Exchange (ALICE) for coupling between earthquake regions, clouds and the ionosphere**

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Atmospheric Lithosphere-Ionosphere Charge Exchange (ALICE) has been proposed as a mechanism to link seismic activity and ionospheric changes detected overhead, which has been observed in data obtained by the DEMETER spacecraft. The ALICE mechanism can explain changes in the natural extremely low frequency (ELF) radio noise observed by DEMETER nocturnally before major earthquakes. ALICE operates through the vertical fair weather current density of global atmospheric electricity, through the modification of surface layer ionisation rates and the associated current flow to the ionosphere. These ideas are extended here to include possible effects on layer clouds through which the current density passes. Specifically, we estimate possible layer cloud changes for changes in surface layer ionisation known in some earthquakes.