



Cosmic ray Clouds and Climate

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Changes in the intensity of galactic cosmic rays alter the Earth's cloudiness. A recent experiment has shown how electrons liberated by cosmic rays assist in making aerosols, the building blocks of cloud condensation nuclei, while sudden decreases in cosmic rays caused by coronal mass ejections from the Sun supports the link from ions to aerosols to clouds. Variations in the cosmic-ray influx due to solar magnetic activity account well for climatic fluctuations on decadal, centennial and millennial timescales. Over longer intervals, the changing galactic environment of the solar system has had dramatic consequences.