

Thermal convections in the Jovian equatorial zonal wind

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In the Jovian equatorial region, there are hot spot/festoon/plume complex features aligned in the east-west direction. These features show convective structures that have upwellings and downwellings in the plumes and the hot spots, respectively. The Galileo Probe entered into a hot spot, and the Galileo orbiter observed clouds and winds around the equatorial features.

In this study, numerical simulations of thermal convections are carried out in the basic zonal flow with horizontal and vertical wind shear, and compared with the Jovian equatorial structures.