

## Thermal convections in the Jovian equatorial zonal wind, 2

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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 a pair of upwelling and downwelling in the plume and the hot spot, respectively.

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

In the zonal flow with simplified linear horizontal and vertical shears, there are two types for the preferred patterns of the convections; the roll-like convection whose axial is the east-west direction, and the cell-like pattern whose axial is the north-south direction.

The latter is similar to the plume-festoon pattern; the upwelling region with the peak at northward and upward, and the downwelling region at east and south beside the upwelling peak.

The northward positioning of the strong upwelling region is accounted for the combination of the effects on the thermal convection by the vertical and horizontal shears of the basic zonal flow.