M33b 2–D MHD Simulation of Helmet Streamer Formation

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We performed two-dimensional MHD simulation on formation of the helmet streamer in the solar corona. The solar corona is assumed initially in hydrostatic balance and isothermal. In our scheme an arcade type magnetic field permeates the corona from below as a result of an evolving old active region. The result of our simulation shows the corona evolves to a new dynamical equilibrium and forms a loop type arcade in the lower part and surrounded by the cusp type arcade. Along the axis of symmetry of a height at about 50,000 km above the arcade base a region of a high-speed solar wind is formed.

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