Contributed Talk

Splinter HiRes

Magnetic vortex flow at a supergranular vertex

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Photospheric vortex flows are thought to play a key role in the evolution of magnetic fields. Recent studies show that such swirling motions are ubiquitous in the solar surface convection and occur on a large range of temporal and spatial scales. Yet, their interplay with magnetic fields is poorly characterized. In this contributed talk we study the relation between a persistent phothospheric vortex flow and the evolution of a network (NE) magnetic element at a supergranular vertex. We use long-duration sequences of continuum intensity images acquired with *Hinode* and the local correlation tracking method to derive the horizontal photospheric flows. Supergranular cells are detected as large-scale divergence structures in the flow maps. At their vertices, and co-aligned with NE elements, isolated regions are found where the velocity fields converge on a central point. One of them is observed as a vortex flow during the whole 24 hr time series. It is made of three consecutive vortices that appear nearly at the same location. At their core a NE element is also detected. Its evolution is strongly correlated to that of the vortices. The magnetic feature is concentrated and evacuated whenever is caught by the vortices and weakened and fragmented after the whirls disappear.