

M11b **Cross-field superslow propagation by continuum Alfvén/slow magnetosonic waves**

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We discuss the apparent propagation produced by phase mixing of continuum Alfvén waves or continuum slow magnetosonic waves on individual magnetic surfaces.

In the spring meeting of Astronomical Society of Japan in 2014, we reported on cross-field propagation which had slower velocity than the characteristic speed of the fast magnetosonic wave in the interior of the prominence of our simulation, and explained it by phase mixing of standing Alfvén or slow magnetosonic waves on individual magnetic surfaces. In this presentation, we derive the analytical solution of the apparent propagation and show examples for two-dimensional potential coronal arcade fields. The speed and direction of apparent propagation are related to spacial variation of the local Alfvén/slow frequency across the magnetic surface. The speed of apparent propagation gets slower with time, leading to a ‘superslow’ propagation that has slower velocity than the characteristic speed of Alfvén/slow wave. The apparent wavelength gets shorter, corresponding to the nature of phase mixing. The direction of the apparent propagation is across the magnetic surface, hence, this phenomenon could be erroneously interpreted as a fast magnetosonic wave. The features of apparent propagation should be taken into account to correctly analyze the results of observations and numerical simulations.