

## The kinetic energy distribution of an eruptive filament observed by Solar Magnetic Activity Research Telescope

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We applied a method called "Beckers' cloud model" to a filament eruption observed in H alpha by Solar Magnetic Activity Research Telescope (SMART) at Hida observatory. Also we contrived a model in which the filament was regarded as a rotating cylinder.

From both model we obtained the Doppler velocity, the Doppler width and the optical depth distributions of the eruptive filament.

The Doppler velocity of erupting filament is combined with the tangential velocity of the apparent motion to obtain three dimensional velocity distribution. From the optical depth and the Doppler width, we estimated the mass distribution of the filament to obtain the kinetic energy (rotational and translational energy) of the eruptive filament.

We think that the detailed quantitative estimate of erupting filament energy provide basic data for clearing the driving mechanism of the eruption.