## M35a Magnetic Structure of a dark filament observed by Hinode SOT/SP

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The magnetic structure of a solar dark filament is an interesting subject since it is related with the dynamics during its eruption which is frequently associated with a flare. The number of observations of the detailed vector magnetic structure is still limited and more samples are necessary. We studied a filament in active region NOAA 10930. Hinode SOT/SP enables us to obtain a high spatial and high accuracy vector magnetic maps on the photosphere beneath this filament. The investigated part of the filament sits almost along a constant latitude, namely in the east-west direction along a magnetic neutral line. The northern side has negative vertical magnetic components. The tangential field has a direction almost parallel to the filament with a slight shear with an azimuth angle of 160 degree defined from the western orientation. This angle, however, contains an ambiguity in the orientation due to the 180-degree ambiguity in the Stokes fitting procedure. In order to know its orientation, i.e. if it is in the normal orientation or in the inverse one, we need to solve this ambiguity. We used the limb observations for the solution. When the filament is near the east limb, we found that the line-of-site magnetic component beneath is positive, while it is negative near the west limb. This change of sign indicates that the axial field along the filament is in the western orientation. By putting together these, we conclude that the filament has an 'inverse-polarity' magnetic structure, namely a flux-rope structure.