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# Formation and evolution of an active region filament

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## Abstract

Several scenarios explaining how filaments are formed can be found in the literature. In our study, we studied an active region filament and critically evaluated the observed properties in the context of current filament formation models. This study is based on multi-height spectropolarimetric observations. The inferred vector magnetic field has been extrapolated starting from the photosphere and the chromosphere. The line-of-sight motions of the filament, which was located near disk center, have been analyzed inferring the Doppler velocities. We conclude that part of the magnetic structure emerges from below the photosphere.

**Keywords:** filament, prominence, active region, photosphere, chromosphere, neutral line, magnetic field, polarimetry

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