# Automatic Detection of Erupting Filaments

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Most of the CMEs are known to be associated with erupting filaments, and can give rise to geomagnetic storms if directed towards the Earth. To be able to predict such storms, it is therefore necessary to monitor filaments on a real-time basis with minimum human intervention. We present here an algorithm that automatically detects and tracks filaments on the Sun in full-disc Hα images. Filament attributes such as their position on the solar disc, total area, length, and number of fragments are determined. This technique can also prove useful in efficient cataloguing of the filaments. The algorithm involves pre-processing of the Hα images, which includes corrections for limb darkening and foreshortening. Further, by applying suitable intensity and size thresholds, filaments are extracted, while other solar features, e.g. sunspots and plages, are removed. In addition, every filament is also labelled with a unique number for identification, and the algorithm is capable of following this label through successive images, which allows us to detect their changes and disappearance. We have analysed several cases of filament eruption from different observatories, and the results obtained are presented. The algorithm will eventually be integrated with an upcoming telescope at the Udaipur Solar Observatory for real-time monitoring of activated/eruptive filaments.