

Magnetic Field Structure of Solar Prominences Deduced from Their Mass Motions

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Tracing of mass motions within solar prominence is a useful way of deducing its magnetic field configuration since they follow magnetic field lines. We have analyzed such motions inside a quiescent filament with the use of successive H-alpha images taken for about 7 hours at Big Bear Solar Observatory on August 10, 2000. According to our newly made H-alpha movies, back-and-forth oscillatory mass motions have been spotted at numerous places inside the observed filament. Such motions seem to occur along dipped magnetic field lines, strongly suggesting that the observed filament consists of a good number of dipped field lines tilted slightly from the main axis of the filament body. Some of the important findings are presented and discussed based on a recent prominence model proposed by Aulanier(1998) who regarded solar prominence as an aggregation of a large number of dipped magnetic field lines.