

Abstract Submitted
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A study of the properties of small-scale magnetic features in a simulated Sun¹ ERIC RAMESH, New Mexico State University — We plan to carry out a statistical study of the properties of small-scale magnetic structures seen in the simulation of solar atmosphere. The 3D Magnetohydrodynamic (MHD) simulation spanning 2 hours with a cadence of 30 seconds is available for analysis. As a first step, we will identify regions of strong magnetic field strength and track them over the entire span of the simulation. Each magnetic structure will be labeled and its positions will be recorded for each snapshot of the simulation. We will then estimate the total area covered, magnetic field-strength, lifetime and other properties of these individual structures. Along with these properties and the average number density of the magnetic structures, we can estimate the magnetic energy present in the small-scale features. The distribution of the sizes, field strength and lifetimes obtained using the simulated data will be compared with observational data of Magnetic Bright Points (MBPs) to evaluate the simulated Sun.

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