

Abstract Submitted
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Nonthermal electron evolution in 3D at the main phase of a 2015-06-22 M-class solar flare¹ SABINA JIA, RICHARD WEN, NATSUHA KURODA, GELU NITA, GREGORY FLEISHMAN, New Jersey Inst of Tech — Solar flares release energy rapidly, accelerating electrons that travel along magnetic field lines and heat up the surrounding plasma. These electrons are known as non-thermal electrons, and to study their evolution across the duration of a solar flare, we model the main phase of the 2015-06-22 M-class solar flare using GX simulator, an interactive application developed for IDL that can model in three dimensions and across multiple wavelengths. The model is achieved by adjusting parameters relating to nonthermal electron distribution and density, along with the maximum energy of the flare. Our results reveal that overall, nonthermal electron density decreases while the electron cloud moves toward a larger magnetic field, indicating a general trend that the parameters, and consequently the evolution of the nonthermal electrons as well, follow as the flare progresses.

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