# Inner Heliosphere Energetic Particle Event Simulation using CISM Global Models

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The CISM (Center for Integrated Space Weather Modeling) framework for coupled, physics-based MHD modeling is designed to provide the essential information needed for constructing inner heliosphere-wide simulations of energetic particle events. In particular, these models provide a steady record of interplanetary field connections from the Sun to an arbitrarily located observer, as well as information about the properties of any coronal or interplanetary shock located on those field lines. One approach to using this information is described in this poster. We show how a time profile of $>$10 MeV protons can be constructed based on a heliospheric model with a simulated CME-driven shock. The user can control various parameters of the particle source(s) and transport, including the average effects of scattering and any contribution by a fixed solar source or a seed population from previous events. These parameters can be either observation or theory-based, or based on additional simulations such as hybrid simulations of shock acceleration. One particular challenge is a consistent description of both the prompt and shock-arrival (ESP) energetic particle event intervals. A general goal is to provide a sufficiently comprehensive set of heliospheric information that others could also use to test additional treatments of any or all of the source and/or transport problem. In this way the CISM models aim to provide an effective experimental framework for the general community of solar and interplanetary energetic particle event modelers.