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Preferential Acceleration of Suprathermal Particles at Shocks

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On October/November 2021 the Heavy Ion Sensor onboard Solar Orbiter observed data connected to three interplanetary shock events: Oct 30, Nov 3 and Nov 27. During all three events, the flux of suprathermal particles, defined as those having an energy larger than twice the energy of the solar wind component, showed remarkable intensification. We discuss those changes and specifically how particles of different mass/charge and energy/charge distribution before the shock are affected differently by the interaction with the shock front itself. From these three examples, it appears that intensifications are stronger for species already having a seed population in the suprathermal regime.