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# Electron acceleration in high beta quasi-perpendicular shocks

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Electron acceleration in high beta quasi-perpendicular shocks is investigated by utilizing a one dimensional full particle simulation. When upstream plasma beta is high, some of the incoming electrons are mirror reflected at the shock. Distribution functions of the upstream electrons are measured for various shock parameters. It is shown that the reflected electrons have relativistic energies even though an Alfven Mach number is less than 10, when the so-called sigma parameter (squared ratio of electron gyro to plasma frequencies) is of the order of 0.1 which, for instance, corresponds to conditions for large scale shocks in galaxy clusters.

Keywords: shock wave, electron acceleration, PIC simulation