# 準垂直衝撃波における電子加速：3次元粒子シミュレーションの結果から

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# Electron acceleration at a quasi-perpendicular shock: results of 3D PIC simulation

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We have carried out a three-dimensional simulation of a quasi-perpendicular shock. The full mass ratio M/m=1840 was taken for this simulation, and we can access cross-scale coupling processes in the shock transition. In this simulation, complicated wave activity is found at the most front end of the shock foot region, and associated with this wave activity production of non-thermal electrons is also observed. Detailed analysis of accelerated electron trajectories shows that the acceleration efficiency depends on the phase of the shock self-reformation. We will discuss physics of electron acceleration mechanism and its relation with three-dimensional behavior of the shock transition region.