

A207a Formation of Sweet-Parker-like electron dissipation region in a driven open system

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Nonlinear development of collisionless driven reconnection is investigated by making use of the electromagnetic particle simulation code "PASMO" developed for an open system which is subject to an external driving source. The electric field at the reconnection point increases and approaches the external driving field as time goes on. After the formation of x-shaped field structure around the reconnection point, the length of the electron dissipation region continues to increase for a short time. Finally, it stops to grow and relaxes to a steady state when the ratio of the width to length is a constant value. A Sweet-Parker-like electron dissipation region is formed in a steady state, while the reconnection rate is controlled by the driving electric field.