

## Observations of the step-like accelerating processes of cold ions in the reconnection layer at the dayside magnetopause

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Cold ions of plasmaspheric origin have been observed to abundantly appear in the magnetospheric side of the Earth's magnetopause. These cold ions could affect the magnetic reconnection processes at the magnetopause by changing the Alfvén velocity and the reconnection rate, while they could also be heated in the reconnection layer during the ongoing reconnections. We report *in situ* observations from a partially crossing of a reconnection layer near the subsolar magnetopause. During this crossing, step-like accelerating processes of the cold ions were clearly observed, suggesting that the inflow cold ions may be separately accelerated by the rotation discontinuity and slow shock inside the reconnection layer.

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