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Cluster multi-point observations of flow-braking and dipolarization during Sep.7, 2007 1250 UT event.

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Dipolarization (sudden enhancement in Bz) is one of the key signatures in the magnetotail indicating enhanced magnetic flux transported from the tail and/or change in the local/global configuration of the tail current sheet associated with substorms. The magnetic signatures have been also interpreted as evidence of current sheet disruption and/or pileup of the magnetic flux as a consequence of the interaction between the fast flows and the Earth's dipole field. On 2007 Sep. 7 1250 UT, Cluster crossed the night-side plasma sheet closer to the Earth, inside of X$\sim$ -10RE, at locations where these near-Earth substorm disturbances are considered to take place. The Cluster configuration during this period contains different separation distances among the spacecraft and therefore allows examining simultaneously the local current density together with evolution of the dipolarization signatures. Multiple enhancements in Bz were detected accompanied by signatures of flow braking as well as flow bouncing and/or formation of flow vortices. Some, but not all, of the enhancements were accompanied by enhancements in energetic particle flux. In this presentation we discuss the current sheet evolution during dipolarization associated with fast flow and flow braking events by examining the gradients in the fields and the flow structures obtained by the multi-point multi-scale observation of the current sheet.