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The azimuthal scale of flux transfer events

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Observations from previous satellite missions have allowed the scale size of flux transfer events (FTEs) to be determined both normal to the magnetopause and in the direction of motion of the FTE (polewards when the IMF is strongly southward). However, a key difference between some different models of FTE structure is their azimuthal scale size, which will also determine what proportion FTEs contribute to the the global reconnection voltage. Whilst previous ground-based observations of the ionospheric signatures of FTEs have indicated that magnetic reconnection can occur coherently over large extents of the magnetopause, in situ determination of the azimuthal scale size of FTEs has not been possible until recent Cluster magnetopause crossing seasons when the separation of the spacecraft was $\sim$10,000 km. In this talk, we present Cluster observations of flux transfer events from 27th January 2006 and 27th March 2007. We find some FTEs which extend further azimuthally than they do poleward, consistent with longer X-line models of FTE formation, but also some more spatially limited structures.