



Comparison of hot flow anomaly observations aboard Cluster with hybrid simulations

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Discovered nearly 20 years ago near the Earth's bow shock, the identification of Hot Flow Anomalies (HFAs) and their separation from other events is still under debate. The observations of the FGM magnetometer, CIS plasma detector, and RAPID suprathermal charged particle detector aboard the four Cluster spacecraft were used to detect and study these phenomena. Several specific features of tangential discontinuities were identified and studied. The size of region of the HFA events was estimated in different ways. The measured and calculated features of HFA events are compared with the results of previous hybrid simulations. General features of HFAs are studied from magnetic field and particle data measured by the Cluster spacecraft from February to April 2003 when their separation was large.