



The evolution of the coronal hole and its corresponding high speed streams

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The acceleration of fast solar wind is one of the important issues in space physics. For understanding this issue, we used the solar images observed by STEREO and SoHO, and the in-situ plasma data detected by ACE and STEREO at 1AU to investigate the characteristics of the high speed streams and its source region-equatorial coronal holes. We used a new automated detection technique that improved from the Krista's model [2009] to determine the size of the coronal hole in July 2008 which existed around half year. We also compare its size with the corresponding high speed streams (HSSs) throughout the life time of this coronal hole. During the same Carrington rotation (CR), the shape and size of the coronal hole and the corresponding HSSs speed usually do not show obvious difference from the observations of two STEREO probes, except CR 2075. Moreover, the power spectrum densities in CR 2075 calculated from the 1AU magnetic field data show obviously different profile in background power although the tendency is similar. The HSS with higher speed has stronger background power than the lower speed one.