

## Analysis of the spatial structures of field-aligned currents using the Akebono magnetometer data

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Field-aligned currents (FACs) play the most important role in the magnetosphere-ionosphere coupling. Magnetic field observations with spacecraft provide us information not only on large-scale FACs such as 'Region1' and 'Region2' currents but also on small-scale FACs. The purpose of this study is to investigate the contributions of large- and small-scale FACs in the magnetosphere-ionosphere coupling using the Akebono magnetometer data.

Since the Akebono satellite was launched in February 1989, its magnetometer observation has been performed over 14 years exceeding one solar cycle. Such a long term satellite observation has never been carried out so far. It is interesting to investigate how the spatial structures of large- and small-scale FACs change depending on the solar cycle or seasons.

Before performing statistical analysis of FACs, we have examined a method which separates small-scale FACs from large-scale FACs with FFT or Wavelet spectral analysis. This paper reports its initial result.