

## DC electric field measurement by the probe system in space plasma: Evaluation of the accuracy (3)

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The lack of highly accurate electric field data is one of the obstacles for the space plasma studies, especially in the phenomena related to the break down of the MHD approximations.

The following investigations are required to establish the quantitative model and evaluation method of the probe system before and after the launch:

- 1) The quantitative modeling of the probe characteristics in the space plasma: The plasma physics around the probe controlled by photo- and surrounding electrons should be quantitatively evaluated.
- 2) Re-investigation of the electric field measurement by the spacecraft (GEOTAIL): Based on the comparison with the quantitative models, the variation of the non-stable terms such as offset and effective length should be evaluated.
- 3) Numerical modeling of the probe system: For the quantitative design of the probe system, the numerical models based on plasma simulations are required.

We will report results of these studies, especially for 2). The connection to 3) will also be reported.