MGI032-04   Room:102   Time:May 23 17:15-17:30

Application of the particle filter to data assimilation for a plasmasphere model

Shin'ya Nakano[1]*, Mei-Ching Fok[2], Pontus C:son Brandt[3], Tomoyuki Higuchi[1]

[1]The Institute of Statistical Mathematics, [2]NASA Goddard Space Flight Center, [3]JHU/APL

The particle filter (PF) is an algorithm applicable to general data assimilation problems including non-linear and non-Gaussian problems. Since the PF is suitable for parallel computing, it is considered to be one of promising algorithms for data assimilation problems with high nonlinearity. In this study, we applied the PF to data assimilation for the Earth's plasmasphere. The plasmasphere is the innermost region in the magnetosphere filled with cold dense plasma. We describe the technical aspect of our data assimilation method and show results of applying this data assimilation technique to the plasmasphere.

Keywords: particle filter, data assimilation, plasmasphere