# ERGサイエンスセンターによるデータアーカイブ及び統合データ解析ツールの開発
# Data archive and integrated data analysis tools developed by ERG Science Center

*堀 智昭[1]、三好 由純[1]、宮下 幸長[1]、桂華 邦裕[1]、小路 真史[1]、瀬川 朋紀[1]、梅村 宜生[1]、関 華奈子[2]、田中 良昌[3]、篠原 育[4]
*Tomoaki Hori[1], Yoshizumi Miyoshi[1], Yukinaga Miyashita[1], Kunihiro Keika[1], Masafumi Shoji[1], Tomonori Segawa[1], Norio Umemura[1], Kanako Seki[2], Yoshimasa Tanaka[3], Iku Shinohara[4]

1.名古屋大学宇宙地球環境研究所、2.東京大学、3.国立極地研究所、4.宇宙航空研究開発機構/宇宙科学研究所
1.Institute for Space-Earth Environmental Research, Nagoya Univ., 2.Univ. of Tokyo, 3.National Institute of Polar Research, 4.JAXA/ISAS

The ERG (Exploration of energization and Radiation in Geospace) is a Japanese geospace exploration project. Its core component is the ERG satellite, an inner magnetosphere satellite with the full set of particle and field instruments currently scheduled to be launched in FY2016. The ERG project consists of the satellite observation team, the ground-based network observation team, and the integrated data analysis/simulation team. Besides these research teams, ERG Science Center (ERG-SC) has been organized to play an essential role in managing the data center for all kinds of scientific data as well as promoting close collaborations of the three teams and other research projects. Thus the goal of ERG-SC is to maximize scientific output from the ERG project. For studies of geospace, where different plasma populations are interacted with each other via cross-energy and cross-regional coupling processes, the integrated data analysis combining various kinds of data sets is key to comprehensive understanding of multi-scale dynamical processes. A standard data format and integrated data analysis tools are essential to realize the seamless data analysis environment for the science community. The ERG satellite data of Level-2 (calibrated, in physical unit) and higher levels and the ground observation network data are archived in the NASA CDF format and basically open freely to the international science community. Together with scientific data, the data files in CDF carry a set of metadata. The metadata set is designed to provide data users with the concise description on the data themselves as well as some useful information used by data analysis software visualizing/analyzing the data. The integrated data analysis tool is developed on the basis of the Space Physics Environment Data Analysis Software (SPEDAS) in collaboration with the THEMIS and IUGONET teams. It should be noted that other satellite project data for geospace, such as THEMIS, Van Allen Probes, and MMS can be easily combined with SPEDAS if the ERG data are also converted to the CDF format. Thus the integrated data analysis using many kinds of data is truly realized through SPEDAS with the standardized data archive in CDF. Other useful tools, such as the ERG Web Analysis Tool (ERGWAT), Conjunction Event Finder (CEF), and the numerical solver tool of the dispersion relation for plasma waves in geospace have also been developed by ERG-SC to contribute to scientific researches related to the ERG project.

 