

超高層物理学におけるデータ集約型科学の第4の科学に関する調査

小山 幸伸 [1]; 蔵川 圭 [2]; 佐藤 由佳 [3]; 田中 良昌 [3]; 池田 大輔 [4]; 阿部 修司 [5]; 堀 智昭 [6]; 新堀 淳樹 [7]; 八木 学 [8]; 上野 悟 [9]; 橋口 典子 [7]; 谷田貝 亜紀代 [7]; 能勢 正仁 [10]; 家森 俊彦 [11]

[1] 京大・理・地磁気センター

; [2] 情報研; [3] 極地研; [4] 九大・システム情報; [5] 九大・ICSWSE; [6] 名大STE研; [7] 京大・生存研; [8] 東北大PPARC; [9] 京大・理・附属天文台; [10] 京大・理 地磁気センター; [11] 京大・理・地磁気センター

Investigation of Data-intensive Science on upper atmospheric physics

Yukinobu KOYAMA[1]; Kei Kurakawa[2]; Yuka Sato[3]; Yoshimasa Tanaka[3]; Daisuke Ikeda[4]; Shuji Abe[5]; Tomoaki Hori[6]; Atsuki Shinbori[7]; Manabu Yagi[8]; Satoru UENO[9]; Noriko Hashiguchi[7]; Akiyo Yatagai[7]; Masahito Nose[10]; Toshihiko Iyemori[11]

[1] WDC for Geomag, Kyoto, Kyoto Univ.; [2] NII; [3] NIPR; [4] ISEE, Kyushu Univ.; [5] ICSWSE, Kyushu Univ.; [6] STE lab., Nagoya Univ.; [7] RISH, Kyoto Univ.; [8] PPARC, Tohoku Univ.; [9] Kwasan and Hida Obs. Kyoto Univ.; [10] DACGSM, Kyoto Univ.; [11] WDC for Geomagnetism, Kyoto Univ.

Science is changing because of the impact of information technology. Experimental, theoretical, and computational science are all being affected by the data deluge, and a fourth, "data-intensive" science paradigm is emerging.

To investigate the mechanism of long-term variations in the upper atmosphere, we need to create integrated links between a variety of ground-based observations made at various locations from the equator to the poles because what we observe is the result of complicated processes. However, the Japanese observational databases (e.g., by a global network of radars, magnetometers, optical sensors, helioscopes) have been maintained and made available to the community by each institution that conducted the observations. Then researchers encountered the problem that is difficult to look for various kinds of observational data to clarify the global scale physical phenomena.

In order to solve the problem, we built the metadata database for upper atmosphere by using extended DSpace. The extended point is to handle the IUGONET common metadata format which include resource types for dataset and human resources instead of Dublin Core. Thereby, the researchers can reach distributed observational calibrated data via metadata.

From a viewpoint of data publication, International Council for Science (ICSU) - World Data System (WDS) members are considering to put Digital Object Identifier (DOI) to dataset by using registration agency like DataCite. Then ICSU - CODATA's Data Science Journal is considering to realize data citation. On the other hand, Open Researcher and Contributor ID (ORCID) launched its registry service on Oct. 2012. Under these situation, we planned to put the both IDs into above mentioned metadata to create linkage between calibrated data and data contributor. As a first step, we put ORCID ID into the metadata.