R010-P09
ポスター 3 ：11/6　AM1/AM2 （9:00-12:30）

松山　幸生 [1)],#藤本　晶子 [1)]
([1 九州工業大学

Proposal for Magnetic Equatorial Electrojet Pattern Recognition Using String Matching

#Yukio Matsuyama[1)], Akiko Fujimoto[1)]
([1Kyushu Institute of Technology

In recent years, research applying AI and machine learning has increased in the solar-terrestrial science field. This trend suggests that space weather informatics will receive more attention. We investigate the properties of geomagnetic equatorial electrojet (EEJs) in relation to the formation and disappearance of plasma bubbles. We propose a pattern search method that applies string matching as a method to detect cases that match a specific EEJ pattern from a large data archive. In this study, we apply string matching to classify the characteristics of geomagnetic variation, which is numerical data, into an increase and a decrease in the range above and below the quiescent state, and perform feature retrieval using character strings. The Rabin-Karp method is used as the string matching algorithm. The Rabin-Karp method is one of the string matching algorithms based on hash functions, and is used to match multiple character strings with the target string. This method is less computationally expensive and faster to detect than machine learning such as neural networks.