

## **Geochemical characteristics of major and minor elements of soil and rocks in Sør Rondane Mountains, East Antarctica**

Noriyoshi Tsuchiya<sup>1</sup>, Hideki Miura<sup>2</sup>, Yusuke Suganuma<sup>2</sup>, Fumio Hashizume<sup>2</sup>, Shin-ichi Yamasaki<sup>1</sup>, Ryoichi Yamada<sup>1</sup>, Yasumasa Ogawa<sup>1</sup>, Satish Kumar<sup>3</sup>, Tetsuo Kawakami<sup>4</sup>, Masahiro Ishikawa<sup>5</sup>, Geoff Grantham<sup>6</sup>

<sup>1</sup> Graduate School of Environmental Studies, Tohoku University

<sup>2</sup> National Institute of Polar Research

<sup>3</sup> Institute of Geosciences, Shizuoka University

<sup>4</sup> Department of Geology and Mineralogy, Kyoto University

<sup>5</sup> Graduate School of Environment & Inf. Sci., Yokohama National University

<sup>6</sup> Council for Geoscience, South Africa.

We collected rock and soil samples from whole area of the Sør Rondane Mountains. Rock samples were collected by geology team (N. Tsuchiya, T. Kawakami, S. Kumar, M. Ishikawa and G. Grantham), and soil samples were taken by geomorphology teams (H. Miura, Y. Suganuma and F. Hishizume).

Soils were generally divided into three layers such as “A” horizon (soil is fine particles and includes some kinds of organisms), “B” horizon (transition layer between layers A and C), and “C” horizon which is a part of original rock). Moraine sediments were dominant in Sør Rondane Mountains, and soil which was defined below 2 mm in diameter was not well developed. Layer structure of soil such as A, B and C horizons were not recognized except several locations of samples.

We also collected glacier sediments (glacier mud) from eastern part of Sør Rondane Mountains (Balchenfjella). We expect that glacier sediments is possible to indicate average whole rock chemical composition of entire area of hinterland.

Chemical analyses were performed in Graduate School of Environmental Studies, Tohoku University (N. Tsuchiya, S. Yamasaki, R. Yamada and Y. Ogawa). Soil samples were dried and sieved, and then we analyzed portion which was under 2 mm in diameter. Major elements (Si, Ti, Al, Mg, Fe, Mn, Na, Ca, K and P) were analyzed energy dispersive XRF (EDXRF: Epsilon 5, PANalytical). Minor and rare earth elements were analyzed by ICP-MS (Elan DRC II, Perkin Elmer SCIEX).