

Lansat 8 による赤雪分布の再評価

Revaluation with Landsat 8 of red snow mapping in ice field

*畠山 栞¹、長谷川 佳佑¹、田代 達也¹、李 肖陽²、Roshanianafard Ali³、川俣 大志^{1,4}、成瀬 延康⁵、竹内 望⁶、高橋 幸弘^{1,7}

*Shiori Hatakeyama¹, Keisuke Hasegawa¹, Tatsuya Tashiro¹, Xiaoyang Li², Ali Roshanianafard³, Hiroshi Kawamata^{1,4}, Nobuyasu Naruse⁵, Nozomu Takeuchi⁶, Yukihiro Takahashi^{1,7}

1. 北海道大学グローバルサイエンスキャンパス、2. 北海道大学大学院環境科学院、3. 北海道大学大学院農学院、4. 北海道大学高等教育推進機構、5. 滋賀医科大学、6. 千葉大学大学院理学研究科、7. 北海道大学大学院理学研究院

1. Global Science Campus, Hokkaido University, 2. Graduate School of Environmental Science, Hokkaido University, 3. Graduate School of Agriculture, Hokkaido University, 4. Institute for the Advancement of Higher Education, Hokkaido University, 5. Shiga University of Medical Science, 6. Graduate School of Science, Chiba University, 7. Graduate School of Science, Hokkaido University

The melting of glaciers has various effects on the environment such as sea level rise and glacial lake collapse. The global warming is commonly believed to cause the melting, while some scientists insist that the breeding of snow creatures on the glacier contributes mainly. The colorful phenomenon such as red snow, where microorganisms breed on the surface of the glaciers, makes the absorption of heat from sunlight increase, resulting in the faster melting rate of the glacier than usual. However, the actual amount of melting in the glacier is unknown. In order to elucidate it, the distribution of the coloring phenomenon on the glacier should be investigated. Therefore, we aimed at observing glaciers using remote sensing which can observe coloring phenomenon extensively and easily. Using remote sensing the red snow has been observed twice (2006, 2015). However, around 19 percent area in the ice field was not observed due to the saturation of the conventional 8-bit image sensor of the satellite. In this study Landsat 8 with the saturation-free 16-bit image sensors (band 2 and 4) is adopted and Harding ice field in June- August 2015 was selected for our observation with the information from previous studies. As shown in figure, we achieve to observe the whole area without the sensor saturating and the red snow appears in the larger area than before. The detail evaluation will be shown in the presentation.

キーワード：ランドサット、赤雪、氷原、リモートセンシング

Keywords: Landsat, Red snow, Ice field, Remote sensing

