

Diagnostic analysis of temperature changes in the Arctic region

Alexandre Laine^{1*}, Abe-Ouchi Ayako¹

¹AORI, University of Tokyo

The Arctic region is experiencing one of the greatest warming on Earth and is expected to continue doing so in the near future. Because of the specificities of its climate, especially in terms of snow and sea-ice cover, the mechanisms associated with this warming are partly different from the ones of other regions in the world. One obvious contribution comes from albedo effect due to sea-ice retreat, but other specific mechanisms are possibly linked with this specific thermal response, e.g. in terms of cloud cover changes.

In this study, we decompose the surface energetic fluxes locally in order to consider the different factors influencing the temperature changes at the surface. The relative role of the different factors is considered for the Arctic region and for the whole globe separately in order to highlight the specificities of the Arctic warming.

Keywords: Arctic, Surface energetics, climate warming, temperature change