Geophysical Research Abstracts,
Vol. 11, EGU2009-13022, 2009
EGU General Assembly 2009

Northern Polar Area Surface Air Temperature Trends and Variability

R. Bekryaev

St.-Petersburg State University, Geography Department; Main Geophysical Observatory, St.-Petersburg, Russian Federation (bekryaev@aari.nw.ru)

Surface Air Temperature (SAT) is not only one of the most important indicators of climate changes in high latitudes but also element of positive feedbacks accelerating Arctic warming. Pronounced changes of Arctic Climate System have been happened since the 1990-th including dramatic loss of sea ice cover maximized in 2007-2008. Impact of NAO/AO index changes on Arctic mean SAT is still controversial. Taking into account complicated structure of sea and land distribution we have considered as a Northern Polar Area (NPA) the territory north from 60NH. For the aims of research the new archive of monthly averaged SAT station data has been created. We have compiled information for about 450 meteorological stations north of 59NH. Analysis has shown that climatic trend of the NPA SAT since 1900 to 2007 is approximately 0.1K/10 years in comparison with 0.7K/10 years trend for the Northern Hemisphere. Especially strong warming has been determined in Arctic in the past decade with absolute records in 2005, 2006 and 2007. Positive trend since 1979 has been demonstrated for almost all meteorological stations north of 59NH. The most pronounced changes were noted for the coastal meteorological stations hinting the positive feedback between the SAT increase and sea ice loss.