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Changes of the Arctic sea ice conditions under the Global Warming

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The negative trend of the Arctic sea ice cover in September for period of satellite observations (1979-2007) has reached 26.6% (9.5% per decade) for the whole Arctic and 63% (16.6% per decade) for the Siberian shelf seas. During 1997 - 2007 there was an acceleration of reduction of ice area in the Arctic in September, which has reach 26% for the specified period for the Arctic Ocean and up to 79% for of the Siberian shelf seas. The most probable reason of acceleration of such sea ice area reduction is the amplified increasing of positive air temperature during summer season. Simulations of the Arctic sea ice by the dynamic-thermodynamic model developed in the Arctic and Antarctic Research institute with atmospheric forcing from NCEP/NCAR reanalysis more adequately reproduced as against ensemble of models CMIP, the accelerated reduction of the area of sea ice last decade, including abnormal position of border of ice cover in September 2007 and 2008. The reason of less sea ice area reduction in the most of global models from observations is probably connected to underestimation of the increase of summer air temperature in the Arctic region by these models. Atmospheric forcing from CCSR/NIES/FRCGC model from CMIP ensemble, which more close reproduce the summer air temperature to the observed, have been used for simulations by dynamic-thermodynamic model of the Arctic sea ice aimed to the forecast of ice extent changes up to the middle XXI century.