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Changes of ice thickness in the Arctic Ocean from shipboard observations during 1977-2007

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Ice thickness is parameter of sea ice cover that is most difficult to measure abundantly. Now particular attention has been given to the progress of measurements using aircrafts, satellites or under ice vehicles. At the same time more capabilities arise to measure ice thickness from the board of icebreakers and icebreaker type ships during their frequent voyages in high latitudes of the Arctic Ocean. The voyages of the Soviet atomic icebreakers to the North Pole started in August 1977 when atomic i/b Arktika reached the North Pole. The next one was the voyage of the atomic i/b Sibir in spring of 1987. Since 1990 such voyages have been more regular. The decrease of the ice cover in the Arctic Ocean allowed to arrange the expeditions of the AARI ship Akademik Fedorov. Specialists from the AARI participating in the first voyages of icebreakers suggested a simple method for visual estimation of ice thickness during i/b movement with the help of measure ruler that is put on the board of the ship. In such a manner they had estimated the thickness of ice fragments that were rotated sideways when i/b moving. This method had been used to estimate ice thickness during voyages of i/b Arktika and Sibir in 1977 and 1987 from ice edge through the North Pole and back. In 2003 the AARI specialists suggested to use a digital TV camera for continual registration of the ice fragments on background of measure ruler. Due to vast datasets of ice fragment images special software have been used to process data. At the moment the significant part of the collected data sets including 1977 and 1987 data had been processed. In context of the recent climate change there is a special interest to compare 1977 and 1987 measurements with data collected after 2003. The results of comparison of ice thickness distributions for these periods are presented in this poster. Processing and analysis of data sets were fulfilled by support of the Russian Fund for

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