



Variability of the circulation in the Pacific Sector of the Arctic Ocean

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The climatological mean summer-fall circulations in the Pacific sector of Arctic Ocean were reconstructed by 4Dvar assimilation of observations available for the periods of (i) 1900-2006, (ii) cyclonic (1989-1997) and (iii) anticyclonic (1997-2006) states and (iv) for the period of the International Polar Year (2007-2009). Comparison of these climatological states with the 2008 July-October circulation reveals significant variations caused by drastic changes in model forcing — namely, wind forcing and sea ice conditions. The 2008 state was additionally validated with respect to independent velocity observations, which were not assimilated. The distribution of the SSH anomalies reveals reasonable correlation with gridded AVISO satellite altimetry anomaly, suggesting that the satellite along-track altimetry could be a valuable source of data for operational hindcast/forecast of the local circulation after its accurate re-tracking and validation.