

昭和基地の平均海水位の経年変動再考

渋谷 和雄^{1,2}、早河 秀章^{1,3}

¹ 国立極地研究所

² 特任教授 ³ 第56次隊員

Decadal Variation of Mean Sea Level at Syowa Station Revisited

Kazuo Shibuya¹, Hideaki Hayakawa¹

¹*National Institute of Polar Research (NIPR)*

² Emeritus Professor, ³ JARE-56 Member

Analyses of tidal observations at Nisino-ura-cove of Syowa Station were made intermittently by several authors. Hither-to the applied data periods were e.g. 8 years (1981-1998) by Odamaki et al. (1991), 15 years (1981-1996) by Yaguchi et al. (2001), and 20 year (1980 - 2000) by Tateoka et al. (2008). The obtained trends were about -1.0 cm/yr ~ -1.4 cm/yr; always indicating negative sign of sea level falling.

In this study, we expanded the data period to 24 years (1979 - 2003), using all available JARE Data Reports Oceanography Series, and unified to the reference level at 28 January 1979 below the BM No. 1040. Figure 1 illustrates the plot of monthly mean sea level (solid circles) and annual mean sea level (solid squares). Previously it was interpreted that systematic decrease of annual variation must be related with sensitivity change of the sensor, but recovery of Sa amplitude after 1994 and change of trend to positive for the overlapped long-period (probably 30 years) S₀ variation strongly supports that this decadal variation is related with climatology-driven phenomenon.

This decadal variations are not correlated with AAO nor ECCO OBP height variation, and the cause of this variation is not found at present. We discuss here some comparison with the ellipsoidal height variation of SYOG, secular gravity change at the IAGBN#0417 point, and long-period seal level changes at Mawson and Faraday-Vernatsky stations.

References

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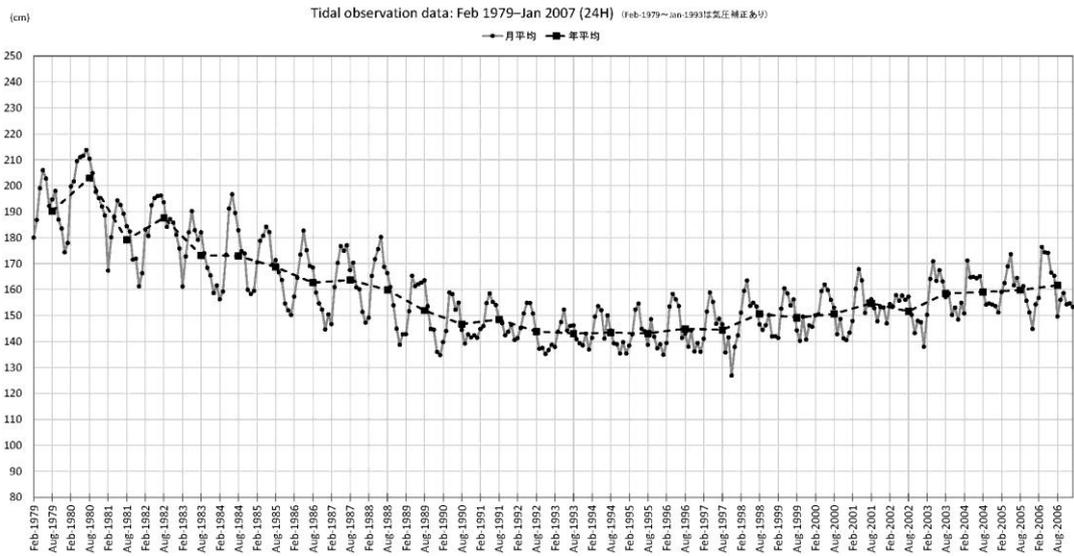


Fig. 1. Variation of monthly mean sea level (solid circle) and annual mean sea level (solid squares) at Syowa Station.