Journal of Geophysical Research: Oceans

Supporting Information for

Seasonal to intraseasonal variability of the surface mixed layer in the Gulf of Oman

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Contents of this file

Introduction

The supporting information contains an additional figure. We provide a supporting figure to validate the glider data management. Seaglider 579 was deployed in March 2015 until the end of May 2015 (91 days) during the spring intermonsoon and Seaglider 510 was deployed in mid-December 2015 and recovered at the end of March 2016 (108 days) during the winter NW monsoon. The data shows the bias between the up and downcast of the corrected glider data profiles for each season. There is an evident deviation during both seasons in the measurements at the first meters of the downcast profiles, more prominent during spring. The temperature bias is caused by the warming of the sensors during the communication phase at the surface between dives. Strong solar radiation warmed the glider and its sensors, causing an artificial rise in potential temperature. The bias in the downcast profiles produces fictitious results when observing lateral gradients, hence only climb profiles are used in this study.

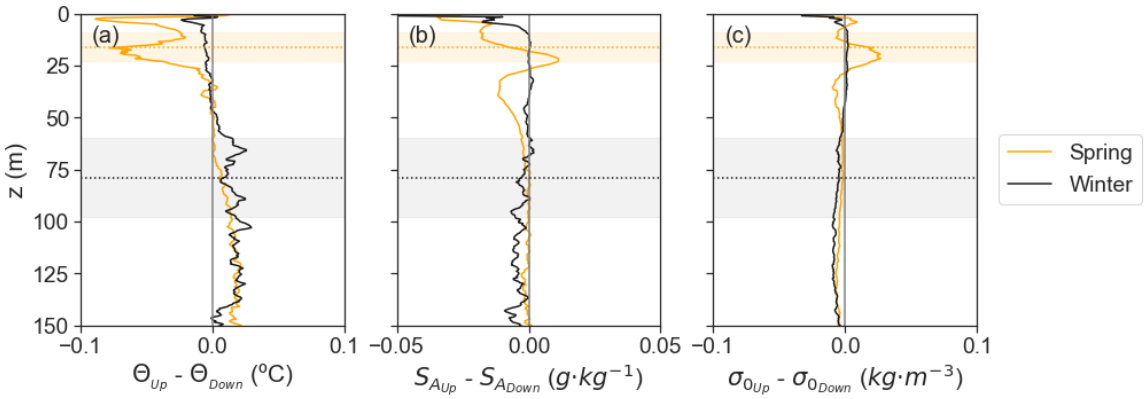

Figure S1. Temperature bias between up and downcast profiles. (a) Conservative temperature (Θ), (b) absolute salinity (S_A), and (c) potential density (σ_0) bias between up and downcast corrected data profiles for each season. The average MLD is displayed as the horizontal dotted line and the shading shows the STD. High air temperatures in the region cause warming of the sensors during the communication phase at the surface producing a bias in the measurements at the first meters of the downcast profiles. The deviation is evident during both seasons, although it is more prominent during spring when solar radiation is stronger.