

KB2023006004: Oxygen calibration

Following the standard calibration procedure, we noted that there appeared to have been a shift of about 25 $\mu\text{mol}/\text{kg}$ in the O_2 -measurements, as the results were (roughly) following two separate lines (Fig 1). The shift appears to have occurred between station 183 and 185 (Fig 2). There is no indication of a shift in the oxygen profiles from the CTD (Fig 3) when comparing station 185 with the neighboring stations occupied prior to the shift (sta 169 and 170) and consequently the shift appears to be related to the Winkler titration. There is no mention of any issues with the CTD between station 183 and 185.

As we can not determine if the Winkler data are good before or after station 185 (or at all!), we flag all data as potentially bad, and do not make any correction based on the Winkler data. Only the raw O_2 -data are submitted to NMDC.

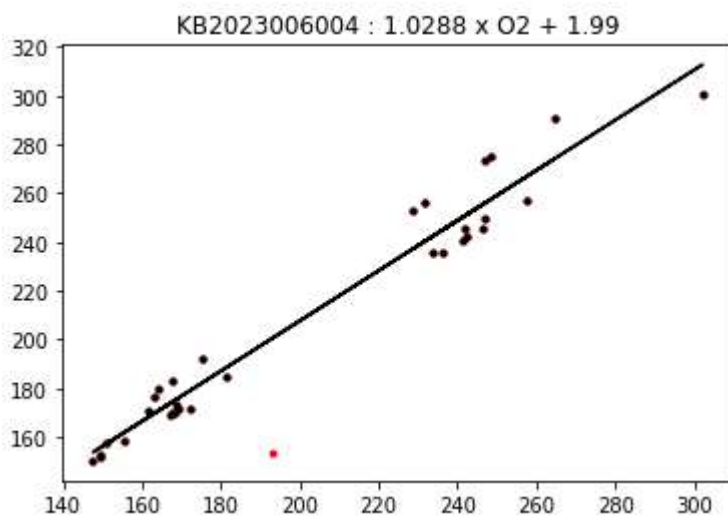


Figure 1: Oxygen concentration measured by the CTD vs oxygen concentration measured by Winkler titration.

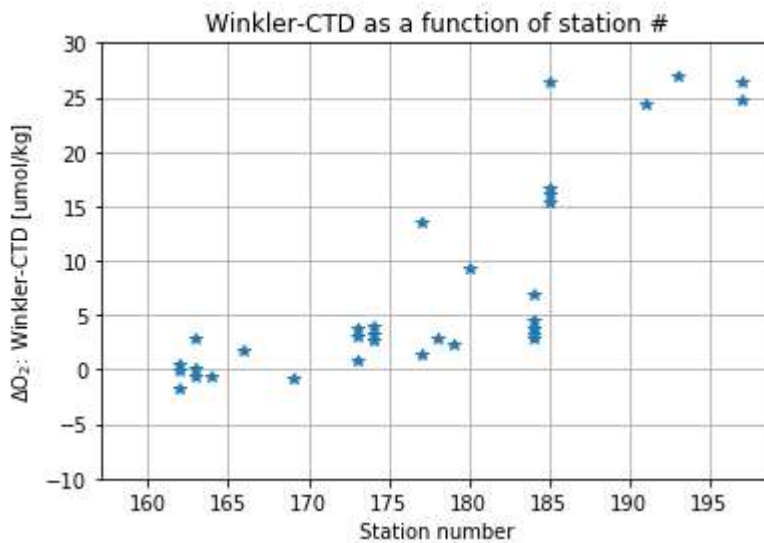


Figure 2: Difference in oxygen concentration measured by Winkler and CTD as a function of station number

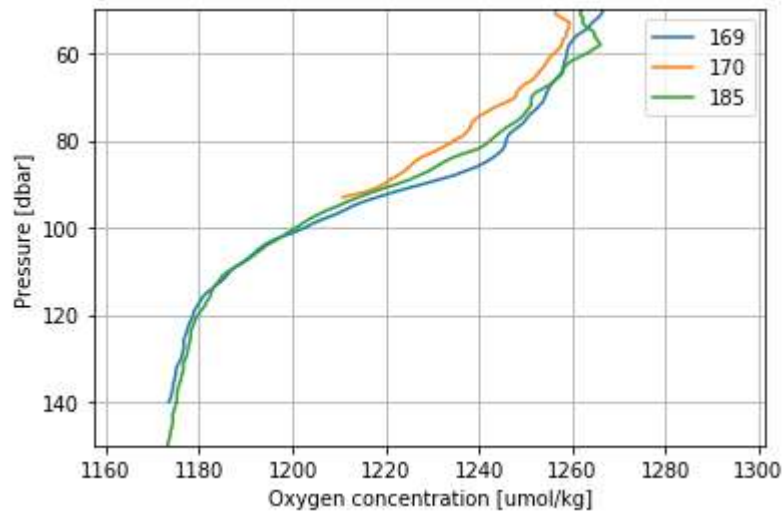


Figure 3: Oxygen concentration (uncorrected, values shown are observed values + 1000) as a function of depth for station 185 and the neighboring station 169 and 170 that were occupied prior to the shift apparent in Fig. 2.