**Table S1:** Characteristics of each generation of floats: type of sensors, known issues, drift correction, number of floats equipped with O2 sensors, number of profiles (in June 2020) and data streams. (1) Real-Time, available 24 h after profiling; (2) Adjusted, RT data after automated QC; (3) Delayed-Mode, best quality data including realistic error estimates, sophisticated data adjustments and QC procedures, manual inspection by either the float’s PI or pre-identified Delayed Mode (DMQC) expert (e.g. Bittig et al., 2019); (4) Gruber et al 2010; (5) Takeshita et al., (2013); (6) Bittig et al., 2018; (7) Thierry and Bittig, (2018).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Generation of Floats** | **Sensors type** | **Known Issues** | **Drift Correction** | **# floats** | **# profiles** | **# RT (1)** | **# A (2)** | **# DM (3)** |
| **First Generation** | SBE43 sensors | Sensor stability and drift (4) | A gain and offset formulation established in stable deep waters (5) | 160 | 26921 | 9972 | 0 | 16949 |
| **Second Generation** | Aanderaa 3830/3835  4330/4831 | Inadequate temperature compensation and/or distorted, incorrect O2 response especially at low to intermediate O2 levels (6) | Either a gain and offset formulation established in stable deep waters (5)  or a temperature-dependent O2 gain (6) | 598 | 111520 | 41929 | 2730 | 66861 |
| **Third Generation** | Aanderaa 4330/4831-  SBE63, RINKO,  ARO-FT | Linear O2 sensitivity drift (6) | Drift correction by an O2 gain factor using the surface p O2 estimated either from in-air measurement or estimated from climatologies at the ARGO-measured Temperature and salinity (6,7) | 498 | 50464 | 22187 | 4883 | 23394 |