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GOANA, a Global Ocean Atlas, Neutrally Averaged

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Isopycnally averaged hydrographic data gives results that are significantly different to the standard method of averaging at constant depth. The act of averaging isopycnally ensures that water masses are neither created or destroyed. We average using the weighted least squares quadratic (or LOESS) fitting method of Chelton and Schlax (1994) and Ridgway et al. (2002) along appropriately defined density surfaces. This produces an gridded oceanographic atlas that is composed of the Fourier coefficients of the mean temporal trend, the strength of the semi-annual and seasonal cycle allowing the user to reconstruct a climatology at any temporal resolution. Initially we are producing an atlas consisting of Absolute Salinity and Conservative Temperature but in the future we aim to include nutrient data.