Observational Datasets for Ocean Acidification Modelling

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In the past decade ocean acidification caused by dissolution of anthropogenic CO2 into the global ocean has been recognized as a potentially serious threat to the functioning of present-day ocean ecosystems. Scientific understanding is rapidly advancing in this field of complex interdisciplinary study. To better evaluate model projections of future ocean acidification there is a need to develop global-scale observational datasets with a full-suite of ocean carbonate chemistry parameters (e.g. pH, pCO2, DIC and Alkalinity) and sufficient temporal resolution to discern seasonal cycles. Here a new global dataset for model evaluation is discussed. This gridded dataset was constructed using a combination of pre-existing and newly derived products, including the Takahashi pCO2 dataset and Lee formulation for computing Alkalinity. We compare our global product with time series observations from a variety of ocean stations.