

How well do GCMs simulate the observed patterns of sea level changes?

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This work assesses to what degree global coupled climate model simulations of dynamic sea level change can realistically reproduce observed patterns, e.g., as observed from satellite altimetry. Projections of regional sea level change over the next century across the multi-model ensemble are very inconsistent and thus lead to a large uncertainty. Performance metrics are used to quantify the ability of GCM's to capture observed patterns of mean, annual and inter-annual SSH variations, and to identify regional patterns and processes that are robust across the GCM ensemble or areas where model improvements are needed. This evaluation can be used to explore possible relationships between the ability of models to simulate observed SSH features with their corresponding projections of sea level rise, with the goal to better understand inter-model differences in these projections.