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The Coordinated Ocean Wave Climate Project

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Future 21st Century changes in wind-wave climate have broad implications for marine and coastal infrastructure and ecosystems. Atmosphere-ocean general circulation models (GCM) are now routinely used for assessing and providing future projections of climatological parameters such as temperature and precipitation, but generally these provide no information on ocean wind-waves. To fill this information gap a growing number of studies are using GCM outputs and independently producing global and regional scale wind-wave climate projections. Furthermore, additional studies are actively coupling wind-wave dependent atmosphere-ocean exchanges into GCMs, to improve physical representation and quantify the impact of waves in the coupled climate system, and can also deliver wave characteristics as another variable in the climate system. To consolidate these efforts, understand the sources of variance between projections generated by different methodologies and International groups, and ultimately provide a robust picture of the role of wind-waves in the climate system and their projected changes, we present outcomes of the JCOMM supported Coordinated Ocean Wave Climate Project (COWCLIP). The objective of COWCLIP is twofold: to make community based ensembles of wave climate projections openly accessible, to provide the necessary information to support diligent marine and coastal impacts of climate change studies; and to understand the effects and feedback influences of wind-waves in the coupled ocean-atmosphere climate system. We will present the current status of COWCLIP, providing an overview of the objectives, analysis and results of the initial phase - now complete – and the progress of ongoing phases of the project.