



CMIP-5 model errors in the tropical Atlantic

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We present a study of the errors in the simulation of the tropical Atlantic by the coupled atmosphere-ocean GCM participating in CMIP-5 is presented and their impact on decadal-hindcast integrations.

The general characteristics of such errors are very similar in pattern across all models, their magnitude is large and they appear coupled with wind-field errors.

By means of an analysis of the error growth in full-field initialised hindcasts, inasfar as available in the CMIP-5 ensemble, we pinpoint the likely mechanisms primarily responsible for the generation of the errors.

Consistently with other studies, there appears to be a driving role from the simulated precipitation in causing wind-stress errors, while a combination of ocean processes and air-sea coupling later allows SST and wind errors to fully develop.

The implication such model-error growth in terms of the representativeness of the simulated fields for the true seasonal-to-decadal evolution of tropical weather patterns are discussed.