



Aerosol impact on seasonal prediction using FIM-Chem-iHYCOM coupled model

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We update on the latest developments and applications of the Flow-following finite-volume Icosahedral Model (FIM) as it is coupled with Ocean (iHYCOM) and Chemistry suites of different complexity from the WRF-chem model. This modeling system is applied to subseasonal to seasonal prediction. The purpose of ongoing experiments with the FIM-Chem-iHYCOM combination is to investigate the aerosol impact on the atmospheric and oceanic circulation at the seasonal time scale.

We compare the model sensitivity with various chemistry emissions, including aerosols, fire and anthropogenic emissions. Additional emphasis of this work is on the effect of aerosols on cloudiness and precipitation, either directly or indirectly through changes in SST. To isolate the latter effect, we conduct parallel experiments with observed SST. The chemistry options include a simple suite with bulk aerosols only, a more complex approach with gas-phase chemistry, and a package that has model aerosols as well as Secondary Organic Aerosols (SOA).