Rainer
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Oral
Ocean skin temperature is an important ingredient to bulk formulae used in computing air-sea fluxes in coupled models. To arrive at unbiased estimates of this temperature, the buildup and collapse of a daytime warm layer as well as surface cooling due to outgoing longwave radiation must be accounted for.

We have been testing a scheme for parameterizing the difference between oceanic bulk layer temperature and skin temperature caused by the buildup of a shallow daytime warm layer. The scheme is meant to replace the more complex NSST scheme which was originally developed at NCEP EMC to mimic the diurnal SST cycle in atmosphere-only models but is now used in the UFS coupled model for global predictions on medium-range to seasonal time scales.

The present scheme makes full use of information provided by the ocean model's mixed layer, thereby circumventing complexities inherited from uncoupled applications. The scheme requires knowledge of the penetration depth for shortwave radiation, top layer bulk temperature, wind speed, and the rate of solar radiation input. We are currently comparing the new scheme with NSST in areas such as long term trends in sea surface temperature patterns, the diurnal SST cycle, and global heat budget.
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Bleck-Rainer.pdf
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