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A variant of the anomaly initialisation approach for global climate forecast models

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This work presents a refined method of anomaly initialisation (AI) applied to the ocean and sea ice components of the global climate forecast model EC-Earth, with the following particularities:
- the use of a weight to the anomalies, in order to avoid the risk of introducing too big anomalies recorded in the observed state, whose amplitude does not fit the range of the internal variability generated by the model.
- the AI of the temperature and density ocean state variables instead of the temperature and salinity.
Results show that the use of such refinements improve the skill over the Arctic region, part of the North and South Atlantic, part of the North and South Pacific and the Mediterranean Sea. In the Tropical Pacific the full field initialised experiment performs better. This is probably due to a displacement of the observed anomalies caused by the use of the AI technique.
Furthermore, preliminary results of an anomaly nudging experiment are discussed.