

## Seasonal predictability of the Atlantic Meridional Mode and its link with the Guinea Dome

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Seasonal predictability of the Atlantic Meridional Mode is investigated by use of the SINTEX-F climate model from the viewpoint of the preconditioning role of the Guinea Dome. The 2009 strong negative event is successfully predicted a few months ahead when the model is initialized using a three-dimensional variational ocean data assimilation (3DVAR) method. However, nudging the sea surface temperature (SST) only for the initialization fails to predict the event. It is shown that the mixed-layer depth in the Guinea Dome region is unrealistically deep in the latter. Denying even one ocean mooring array data at 12°N, 23°W in the 3DVAR initialization clearly demonstrates that monitoring the Guinea Dome is very important for predicting the Atlantic Meridional Mode.

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