Atlantic Variability and Predictability
Changes in Atlantic sea surface temperature have the potential to influence coastal and inland climate variability (e.g. weather and climate conditions in the surrounding continents, particularly in the tropical band and at middle-to-high latitudes). Its variability ranges multiple timescales. At short term, seasonal-to-annual, variations in the tropical Atlantic are dominated by the Atlantic Niño—leading variability mode of sea surface temperature (SST) in the basin. At long term, annual-to-decadal, the ocean dynamics gains special relevance. The wide SST signature of the North Atlantic multi-decadal variability, the AMO, is relatively more challenging due to the scarcity of observational data. Likewise, the AMO-AMOC relationship is still controversial.

Objectives
Under different national (RESPONS, DANAE) and international (FP7 PREFACE, H2020 DPETNA) projects, BSC-ES tries to advance research and enhance understanding, as well as prediction, of Atlantic SST at seasonal-to-decadal timescales, undertaking the following main research topics:

- investigate the causes of model biases and work towards their elimination
- gain dynamical insights into the mechanisms underlying variability and impacts
- improve seasonal-to-decadal forecasts of Atlantic SST and related phenomena

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