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Imprints of intrinsic low-frequency variability: Global Ocean, Atlantic, Gulf Stream

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In high-resolution Ocean General Circulation Models (e.g. Penduff et al., 2011) as well as in idealized studies (Djikstra and Ghil, 2005), a substantial amount of low-frequency variability is spontaneously generated by oceanic non-linearities. We quantify various imprints of this oceanic intrinsic variability by comparing, at various resolutions, global OGCM simulations driven by two atmospheric forcings (with and without interannual timescales). We will present how this phenomenon affects the interannual variability of the AMOC, and of global sea-surface height/temperature fields. We will finally describe how various dynamical features of WBC systems (focusing on the North Atlantic) spontaneously co-vary over a wide range of temporal scales, with a clear intermittent behavior.