So dtodays topic of concern is air sea interactions at the oceanic mesoscale and how they are erpresented, or at least partly so, in a state oft he art coupled simulation

Later on with the talk we wilol give a meanin tot he adjective mesoscale, but Before deblving in the details, we should embark on a cruise to find out what kind of enetgie3s are exchanged at the interface between the atmosphere and ocean and which processes modulate them,

saying that atmosphere and ocean are coupled means that …

<< fancy slide with animations >>

Now, the picture here in particular might be misleading, [[[ but one would expect the same coupled processes to have the same degree of importance and ]]] but the key, non-trivial point here is that the variability of all such fields is strongly scale-dependent ; composite variables such as the tubrulent fluxes , are not driven in the same way by wnid and sst, for example, if you were to compare the global picture with at the regional scale and even in the presence of feedbacks on one another, there can be distinguished precise directions of influence of either the sea and the atmosphere on each another.

What I mean is clearly depicted in these two plots by gentemann

<< explain plots by Gentemann et al 2020 >>

If you notice The most postiive correlations are set in regions where the oceanic currents are really well developed

To further convey the idea of the existence of oceanic structures, i will totally rely on the gulf stream as an xmaple: What you should appreacvitye the most here is the marked temperature gradient between one side and the other oft he front, which is locally strengthened by meanderings of the currrents borne out of shear instabilities: we can take here such anomalous whirlings as an operational definition of the oceanic mesoscale. Such structures are omnipresent in the oceans worldwide and various shapes have been recognized ; the thermodynamic gradients are usually much weaker than those here