

The Gulf Stream, the Jet Stream...and the Quantum Café

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In this presentation I will discuss the robustness of the Jet Stream response to changes in the state of the Gulf Stream. I will first review recent observations of the variability of the Gulf Stream, as well as the basic physics through which the latter can impact upper levels of the troposphere. I will then suggest that as long as the oceanic forcing is controlled by (quasi-geostrophic) eddy mean flow interactions, details of the associated change in sea surface temperature and background atmospheric flow will matter to predict the climatic impact of the Gulf Stream variability. A different type of oceanic forcing is associated with the organisation of mesoscale atmospheric convection by the Gulf Stream, but this pathway is fundamentally stochastic in character.

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