

The case for Dark Flow: Observational evidence for and against cosmic bulk flow, quantum entanglement, and parallel universes

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In this talk we will review the case for and against a bulk cosmic motion resulting from the quantum entanglement of our universe with the multiverse beyond our horizon. Within the current theory for the selection of the initial state of the universe from the landscape multiverse there is a generic prediction that pre-inflation quantum entanglement with other universes should give rise to a cosmic bulk flow with a correlation length of order horizon size and a velocity field relative to the expansion frame of the universe. Indeed, the parameters of this motion are tightly constrained. A robust prediction can be deduced indicating that there should be an overall motion of about 800 km/s relative to the background space time as defined by the cosmic microwave background (CMB). This talk will summarize this underlying theoretical motivation for this hypothesis.