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LARGE CONFERENCE ROOM, GEOMAR WESTSHORE

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Variability in the biological carbon pump

Abstract: The biological carbon pump is a series of processes that transfers organic carbon from the surface ocean into the deep ocean. Without it, atmospheric CO₂ levels would be ~ 50 % higher than they already are. Despite its importance, we currently struggle to understand how the strength and efficiency of the biological carbon pump vary over time – whether on scales of days, seasons or years. This makes it difficult to understand the processes controlling the pump, and therefore to appropriately model it, so our knowledge of how this important component of the global carbon cycle might respond to climate change is poor. In this talk I'll discuss four questions: How big is temporal variability in the biological carbon pump? How does this affect our understanding of the biological carbon pump? Can variability tell us something useful about the processes driving the biological carbon pump? What are the prospects for quantifying temporal variability.