



The UK's National Supercomputing Service

One year in the southwestern Indian Ocean

This video shows one year of sea-surface temperatures from WINDS-C, a $1/50^\circ$ (c. 2km) resolution ocean model that covers almost all coral reefs in the southwestern Indian Ocean (SWIO). We have used this model (run on ARCHER2) to assess coral reef connectivity through larval dispersal on multi-decadal timescales across the SWIO. This video was made by rendering sea-surface temperature as a shaded height-map (as well as a traditional colourmap), which does a great job of emphasising flow across scales from 10s - 1000km. In this video, you can clearly see the major features of ocean circulation in the SWIO, such as the Southern Equatorial Current transporting water westwards towards Madagascar, which then intensifies into the rapid North Madagascar Current (flowing towards East Africa and shedding many eddies) and East Africa Coastal Current, which races northwards along the East African coast.

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