

Southern Ocean eddies observed by Argo floats

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There is no landmass that blocks zonally flowing Antarctic Circumpolar Current (ACC) in the Southern Ocean. This means all meridional transport in the upper layer is driven by non-geostrophic dynamics; the Ekman transport by the westerly jet and by mesoscale eddies. Synoptic observation of these Southern Ocean eddies were limited to the surface where satellite altimetry data are available, but recent increase in number of Argo floats, thanks to the vibrant effort of the community, deployed in the Southern Ocean now enables us to describe the eddies in the mid-depth (1000 m). The eddies are highly localised to several locations where the ACC negotiates the bottom topography. In these "eddy hot spots", such important physics were observed as efficient downward transport of eastward momentum imposed by the wind at the surface and upgradient eddy transport.

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