



## Observed eddy dissipation in the Agulhas Current

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Analyzing eddy characteristics from a global data set of automatically tracked eddies for the Agulhas Current in combination with surface drifters as well as geostrophic currents from satellite altimeters, it is shown that eddies from the Mozambique Channel and south of Madagascar dissipate as they approach the Agulhas Current. By tracking the offshore position of the current core and its velocity at 30°S in relation to eddies, it is demonstrated that eddy dissipation occurs through a transfer of momentum, where anticyclones consistently induce positive velocity anomalies, and cyclones reduce the velocities and cause offshore meanders. Composite analyses of the anticyclonic (cyclonic) eddy-current interaction events demonstrate that the positive (negative) velocity anomalies propagate downstream in the Agulhas Current at 44 km/d (23 km/d). Many models are unable to represent these eddy dissipation processes, affecting our understanding of the Agulhas Current.