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Mesoscale activity in Drake Passage during the cruise survey ANT XXIII/3

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Drake Passage is a key chokepoint for the world's largest current, the Antarctic Circumpolar Current (ACC). It is a relatively shallow area with extremely rough topography compared to the depths encountered by the ACC along its circumpolar path. Through the passage, topography controls the preferred paths of the ACC jets as well as, in some way, eddy activity. Drake Passage is a region of high eddy kinetic energy. We examine the mesoscale activity during the cruise survey ANT XXIII/3 comparing in situ data and satellite data. In situ data consist of two high-resolution full depth hydrological sections with LADCP carried out along track 104 of the altimetric satellite JASON-1 in less than three weeks in January-February 2006. We then identify the strongest mesoscale features from altimetry and we describe their impact on the circulation across the passage during the cruise period. We identify location where eddies are formed and absorbed or dissipated in the passage. The mesoscale situation during the cruise period is then placed in a longer term context using the 16-year satellite altimetry time series.