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Abstract for an Invited Paper
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Transition from interior to boundary turbulence: implications for the buoyancy flux divergence.

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I will discuss results from a cascade of nested simulations of flow over rough topography in the Southern Ocean with focus on transition from turbulence induced from breaking of upward propagating internal waves in the interior and above rough topography to that induced by boundary trapped modes in vicinity of the ocean floor. I will show that this transition leads to a change in sign of the buoyancy flux divergence, which implies a change from interior downwelling to intense upwelling in the boundary layer. I will show that in the Drake Passage region, the latter dominates the former leading to a net upwelling. I will finish by highlighting the potentially important implications of the results for the abyssal branch of the global ocean meridional overturning circulation.