



FIGURE S1. An ensemble of climatological stratifications along the Patagonian shelf break and continental slope (highlighted in the left panel using selected isobaths). The blue envelope represents the maxima in the Brunt-Väisälä frequencies for all austral winter profiles between 200 m and 2,000 m as a function of latitude; average values for July along the 1,000 m isobath are shown as a black solid line. The orange envelope is the same for the austral summer, and in this case the solid black line is for January.