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Weakly stratified bottom boundary layer in global oceans

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The weakly stratified bottom boundary layer (wsBBL) of the global oceans is currently unmapped; even the definition of the wsBBL layer is yet lacking. However, recent studies point to the wsBBL as a region were most of the abyssal water transformation takes place. In this study, historical high-resolution density profiles are used to map the properties of the wsBBL in the Atlantic and global ocean. The thickness of the wsBBL vary from several meters to over thousands of meters and can be used as a rule of thumb to differentiate basin walls from the basin bottom, respectively. The hydrographic properties of wsBBL are used to differentiate the different basins, connected by the narrow channels, along the pathways of abyssal water circulation. The diagrams give insight into the different mechanisms of abyssal water transformation and highlight locations where transformation happens: inter-basin channels and over some parts of mid-oceanic ridges.