



FIGURE 4.2: Horizontal integer indexing used in the FORTRAN code. The dashed area indicates the cell in which variables contained in arrays have the same i - and j -indices

Vertical Indexing

In the vertical, the chosen indexing requires special attention since the k -axis is re-orientated downward in the FORTRAN code compared to the indexing used in the semi-discrete equations and given in §4.1.1. The sea surface corresponds to the w -level $k = 1$ which is the same index as t -level just below (Fig.4.3). The last w -level ($k = jpk$) either corresponds to the ocean floor or is inside the bathymetry while the last t -level is always inside the bathymetry (Fig.4.3). Note that for an increasing k index, a w -point and the t -point just below have the same k index, in opposition to what is done in the horizontal plane where it is the t -point and the nearest velocity points in the direction of the horizontal axis that have the same i