

Class summary - 28.03.2018

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1 Class summary

We discussed the differences of multiplying depth averaged density and horizontal velocity and how it is important to realize in some cases that the arrangement of terms is relevant.

Units of the mass flux, both with respect to a mass flux [mass/time] and as in volumetric terms [volume/area]. Volume is not conserved if the medium can compress. We use mass as it is conserved when snow and firn compress

Setup of equations to describe the inflow and outflow flux over a control volume over two surfaces.

Discussion about forces, mechanical behaviors and characteristic lengths of glaciers, snow, firn and sea ice. Different depending on the element to be investigated. Example for sea ice when brine channels are investigated the characteristic lengths are in the order of mm and cm while if investigating the extent of sea ice in the North Atlantic km and thousands of km is relevant.

Finally discussion of stress and strain and how they are defined and described. This will be continued.