

Water vapor transportation and change of water stable isotopes of snow due to snow temperature gradient

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In the snow, isotopic composition could change by growth depth hoar, because water vapor transportation and condensation within the snow due to large snow temperature gradient at near-surface snow. However, quantity of change of isotopic composition of low isotopic composition (condition of inland Antarctica) by water vapor transportation is not well known. We try to indicate change of isotopic composition of snow by water vapor transportation within the snow by experiment of snow temperature gradient. We observed isotopic change by water vapor transportation between side by side snow blocks which are different isotopic composition. Snow sample has temperature gradient from 86 to 166 degree C m⁻¹ over 7 days in the cold room. We estimated quantity of water vapor transportation and isotopic composition change by isotope fractionation.

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