

Climatological study of channeling flow focused on surface geostrophic wind

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In this study, channeling flow (including two channeling flow types: forced channeling and pressure driven channeling) in Kitakami Basin, Japan, is climatologically investigated by using observational surface wind and surface geostrophic wind data for 23 years. As a result, it is found that forced channeling tends to occur when the direction of surface geostrophic wind is almost parallel to the valley axis. On the other hand, pressure driven channeling tends to occur when the component perpendicular to the valley axis of the surface geostrophic wind is larger than the component parallel to the valley axis of the surface geostrophic wind. Moreover, neither channeling flow type is a majority when the component parallel to the valley axis of surface geostrophic wind is slightly larger than the orthogonal component. In this situation, it is suggested that it cannot be explained by using only surface geostrophic wind whether forced channeling is dominant or pressure driven channeling is dominant.