

## Temporal and spatial characteristics of gust ratio in the

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Localized downslope wind often causes severe disasters, although the dynamics of these severe phenomena has not fully elucidated due to their small temporal and spatial scale. The damage by downslope wind is strongly determined by the instantaneous maximum wind speed. Since the numerical model can derive averaged wind speed along time and space determined by the model resolution. The classical analogous theory points out that the gust ratio, which is defined as the ratio of maximum wind velocity to the averaged wind velocity, becomes a constant value (1.5-2.0), depends only on the roughness length of surface condition.

In the actual atmosphere with the horizontal inhomogeneity, the gust ratio may varies with time even at the same location. The sophisticated modeling of gust ratio beyond the simple constant model is very important for the forecasting of gust damage. The detailed characteristics of gust ratio was investigated by the data of hyper-dense surface observation network in the Hira Oroshi region. The temporal and spatial characteristics of gust ratio and future prospective to install our algorithm into the numerical prediction models are discussed in the presentation.