

**P50 Numerical study on the generation and development process of the local downslope wind "Zao-Oroshi"**

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Strong downslope winds, which occur on the lee side of mountains, can damage to the transmission and distribution lines passed near the mountains region. On 4 April 2012, "Zao-oroshi" downslope wind occurred on the eastern side of Zao mountain range, when a developed low passed from the Sea of Japan to the Sea of Okhotsk. In order to understand the atmospheric environment for the generation of Zao-oroshi and its development process, we performed three numerical experiments, which are the control, the half terrain height, and the no generation of Zao-oroshi case. For generation of Zao-oroshi, the surface wind direction on the windward side of Zao mountain was west or west-southwest, and the wind speed was above 15 m s<sup>-1</sup>. Moreover, the vertical shear and the stable layer located above 6 and 7 km in height, respectively. The stable layer was not present in the low level troposphere. We suggest that the surface wind, the vertical wind shear height, and the existence of the stable layer in the low level troposphere on the windward side of Zao mountain are useful for the prediction of Zao-oroshi