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## On the Response of the Aleutian Low to Greenhouse Warming

### Abstract

Past and future changes in the Aleutian low are investigated by using observation-based sea level pressure (SLP) datasets and CMIP5 models. It is found that the Aleutian low intensity, measured by the North Pacific Index (NPI), has significantly strengthened during the twentieth century, with the observed centennial trend double the modeled counterpart for the multimodel average of historical simulations, suggesting compound signals of anthropogenic warming and natural variability. As climate warms under the strongest future warming scenario, the climatological-mean Aleutian low will continue to intensify and expand northward, as manifested in the significant decrease (21.3 hPa) of the multimodel-averaged NPI, which is 1.6 times its unforced internal variability, and the increase in the central area of low pressure (SLP, 999.0 hPa), which expands about 7 times that in the twentieth century.

### Keyword

Aleutian low (AL)

### Reference

Gan, B., Wu, L., Jia, F., Li, S., Cai, W., Nakamura, H., Alexander, M. A., and Miller, A. J., 2017: On the Response of the Aleutian Low to Greenhouse Warming. *J. Climate*, **30**, 3907–3925, doi: <https://doi.org/10.1175/JCLI-D-15-0789.1>