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Horizontal Convections above Japanese Islands

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Horizontal convection is one of the most basic processes in geophysical flows. Above Japanese islands it is well known that Asian monsoon and land and sea breeze blow. In summer land surface temperature in Japanese islands is high compared to sea surface temperature and in winter land surface temperature is low. We analyzed land surface wind data of Japan Meteorological Agency and revealed that seasonal wind which comes from temperature difference of Japanese islands and sea surface blows.

Mori and Niino (2002) studied time evolution of nonlinear horizontal convection theoretically. In order to reveal which regime these winds belong to, we apply this theory to horizontal convections above Japanese.