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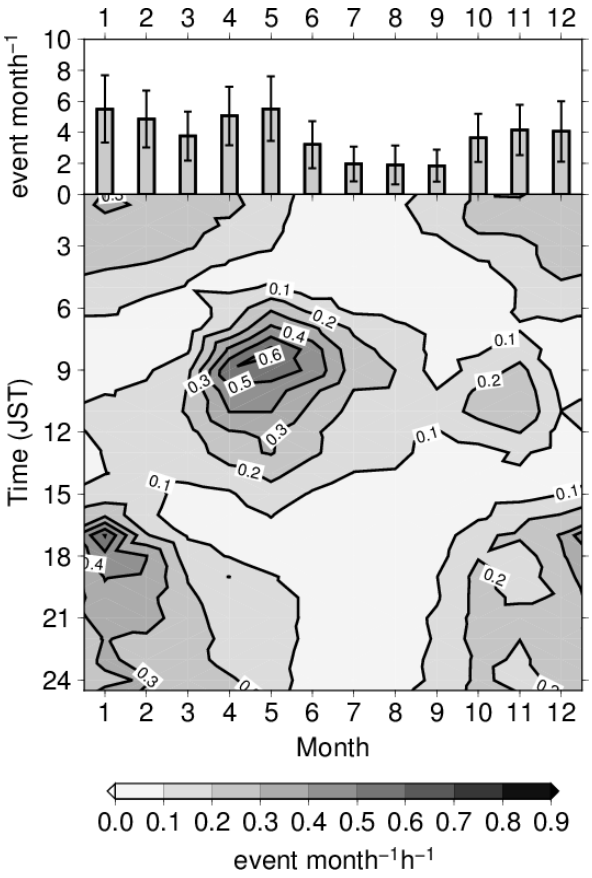

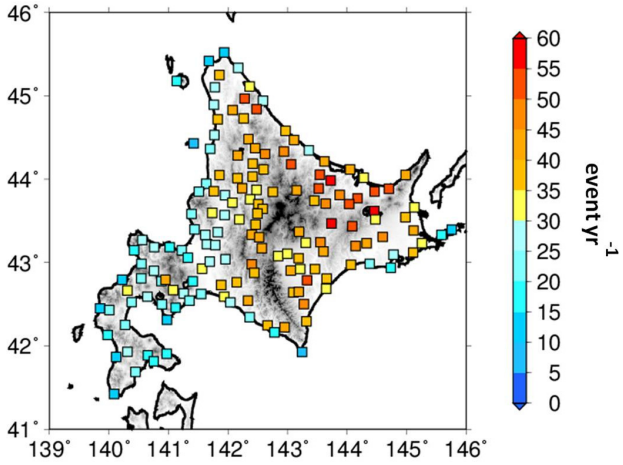

↑Figure 1. Horizontal distribution of annual mean frequency for high-temperature event in Hokkaido.

← Figure 2. Diurnal and seasonal variation in high-temperature event frequency for Okhotsk area. Upper panel represents monthly average frequency of high-temperature event (event month^{-1}). Lower panel represents monthly (lateral axis) and diurnal (vertical axis) variations in the high-temperature event occurring at a particular time of the month (event month^{-1} h^{-1}).

- The annual mean frequency of high-temperature events is lower at stations on the western side of Hokkaido than those on the eastern (Fig.1). Okhotsk area experiences the high-temperature events most frequently. These characteristics are found in every month.
- The frequency of high-temperature events in Okhotsk area has clear seasonal variation with two distinct peaks occurring in winter and spring (upper panel in Fig.2). The initial time of high-temperature events is classified into two types with respect to season: that from fall to early spring (March) is referred to as the winter type, and that from early spring (April) to early summer (July) is referred to as the spring type (lower panel in Fig.2). The spring and winter types have one diurnal peak, which are in the morning and in the evening, respectively. These characteristics are similar to the entire Hokkaido region.
- An extratropical cyclone passage is responsible for winter type high-temperature events. The spring type high-temperature events are triggered by two different mechanisms related to solar insolation, which includes dynamic foehn and combination of airflow diabatically heated by surface sensible heat flux and dynamic foehn.