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Variation and Distribution of Winter Snow Depth in Japan Using “Seasonal Snow Depth Index”

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Abstract

The “Seasonal Snow Depth Index (SSDI)” was defined for the quantitative evaluation of the distribution and variation of snow depth. SSDI distribution maps were examined for 31 winters. The snow depth distribution differed among winters. A quantitative expression of the areal distribution tendency was proposed. The relations between SSDI and both the winter East Asian monsoon and global circulation were examined. Low temperatures, or a strong winter Asian monsoon were related to a snow-rich winter. A snow-rich winter was more likely to occur in a warmer winter in the 2010s than in the 1980s. The multiple regression coefficient of indices of the Arctic oscillation, West Pacific Pattern, and Niño3.4 to SSDI were all negative, and the ratio of their contribution was slightly less than 0.5.

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