



The Influence of Arctic Oscillation and ENSO on Snow Cover Days on Qinghai-Tibetan Plateau

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Based on Qinghai-Tibetan Plateau Snow data, index of NINO sea temperature anomaly, and AO index. The influence from Arctic Oscillation and ENSO to days of snow cover in plateau was studied, and the main conclusions are as follows:

1. Both AO index and NINO index are positively correlated with days of snow cover in plateau, and the correlation coefficients are 0.59, 0.41 respectively (both passed the significant test at 0.01 level). There is a positive correlation between NINO index and western plateau, and passed the significant test. But to the eastern plateau, it is uncorrelated.
2. The average of snow cover days in whole plateau is 8.79 d, during 1964-2013. The maximum value of snow cover days is 41.38 d in Nielamu, and the minimum lesser than 1 d in Haiyan. When the AO at positive anomaly, the snow cover days is higher, and the maximum value up to 48.8d at Jiani. At in negative anomaly of AO, the snow cover day is lower. There is a positive correlation between AO and snow cover days.
3. When the AO at positive anomaly with El Nino, the maximum value of snow cover days up to 54.25 d. Influence of AO and El Nino, the snow cover days is higher. When the AO at positive anomaly with La Nina, the maximum value of snow cover days is 46.3 d, and it is lower than the maximum value which is under AO at positive anomaly period. When the AO at negative anomaly with El Nino, the value range of snow cover days is 0.007-42.86 d. Due to the Influence of El Nino, the value snow cover days is higher, but with smaller region. When the AO at negative anomaly with La Nina, the snow cover days is lower in whole plateau. the snow cover days was directly affected by AO and ENSO, and the first is more effective than the latter.

Key words: AO; ENSO; Qinghai-Tibetan Plateau; snow cover days

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