The Variation of Arctic Oscillation (AO) events and its climate effect before and after 1979 have been examined using a long-term daily data (1948-2009). As AO can be defined as the leading empirical orthogonal function of the geopotential height at 1000-hPa, AO events are detected from a daily AO index which constructed by projecting the daily 1000-hPa low frequency (8-day low-pass filtered) geopotential anomalies onto the December-February AO anomaly. AO events could be categorized into the stratospheric (S) type and tropospheric (T) type, in terms of the anomaly pattern of the stratospheric polar vortex.

In the S-type AO events, two significant differences are found between AO events during two periods. Since 1979, a much stronger anomalous circulation inclines to cover the region from Europe/ North Atlantic sector, which induces the anomalous surface air temperature over vast Europe and precipitation over north of East European Plain. And AO events tend to cause the eastward extension of the Siberian high, which led to the anomalous surface air temperature and precipitation dominating over Southern China.

In the N-type AO events, the distinction of AO events over the region from Europe/ North Atlantic sector during two periods is similar.

Key words: AO, Siberian high