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Oceanic and continental teleconnection patterns: NAO and Polar/Eurasia patterns

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North Atlantic Oscillation (NAO) is known as an important circulation pattern for the European climate. The NAO is, in principle, a regional seesaw pattern in the sea-level pressure (SLP) over North Atlantic Ocean, although a connection with the Eurasian temperature is recently discussed.

In the Euro-Atlantic sector, there exists another teleconnection as shown by Exner (1913): a seesaw in the SLP between the polar and Mediterranean regions. This pattern has a third center of action in the 500-hPa height over northeastern Asia and exhibits a more hemispheric pattern similar to the Polar/Eurasia teleconnection pattern. The two teleconnection patterns in the SLP are often confused because of the similarity of the structure around Europe. However involved processes are different. The NAO can be characterized as variation related to the storm track activity over the ocean sector, on one hand, on the other hand the Polar/Eurasia pattern or the Polar-Mediterranean seesaw mode may be characterized by a close relationship with the topography of the Eurasian continent. Recent increasing temperature trend is largely due to the latter pattern.