Use of the tendency of simultaneous impact of NAO and SO for the prediction of Indian summer monsoon rainfall

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North Atlantic Oscillation (NAO) and Southern Oscillation (SO) are existing throughout the year and are known to affect monsoon circulation over Indian subcontinent individually. The simultaneous effect of NAO and SO on Indian summer monsoon rainfall (ISMR) is more important rather than their individual impact. To represent the simultaneous impact of NAO and SO, an index called effective strength index (ESI) has been defined on the basis of monthly NAO and SO indices.

The correlation analysis suggests an inverse association between ISMR and ESI in the month of April. This relationship is statistically significant at 5% level. In this paper, the variation in the tendency of ESI from January through April has been analyzed and its use in the prediction of ISMR, on smaller spatial scale, is examined. The analysis shows an inverse association of the tendency of ESI from January through April with summer monsoon rainfall over India as a whole and some of its homogeneous regions. This tendency can be used as a pre-cursor for the prediction of monsoon rainfall over various parts of India and India as a whole.

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