## **Probabilistic Prediction of monsoon Intraseasonal Oscillation**

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The prediction of monsoon Intraseasonal Oscillation (ISO) is a challenging area of research in the field of monsoon meteorology. In this study an attempt has been made to predict the phases of monsoon ISO in the real time basis for the year 2009 based on a clustering technique known as Self Organizing Map (SOM). The prediction technique is an extension of the previously developed SOM based prediction scheme by Chattopadhyay et al.,  $(2008)^{l}$  and is essentially formulated to be probabilistic in nature giving the probability of pentad rainfall for three predefined classes: active (defined as rainfall > +25% of the normal value), break (rainfall < -25% of the normal value) and normal (rainfall between +25% and -25% of normal value). The prediction scheme is analogue in nature and is based on a large number of dynamical parameters taken from NCEP-NCAR Reanalysis. The probability density functions are constructed based on an ensemble of 50 SOM models. The analogue of the spell to be forecasted is randomly chosen (selection is made 50 times to get the ensemble of 50 forecasts<sup>2</sup>) from a past pool of data spanning the years from 1951 to1998. The study shows that the break spells are predicted with better fidelity 4<sup>th</sup> pentad in advance as compared to the active spells. However, for operational prediction purpose it is demonstrated that there is a useful skill in prediction of both the active and break spells up to 4 pentad in advance deliverable to the user community using this approach.

## Reference:

[1] Chattopadhyay R., Sahai A.K., Goswami B.N., J. Atmo. Sci., 65, 1549-1569 (2008).

[2] Sahai, A.K., Chattopadhyay, R., Goswami, B.N., *GRL*, VOL. 35, L19705, doi: 10.1029/2008GL035461, 2008.