

## **Lecture 9.2 (12:10-12:35)**

### **Distribution and time-series modelling of ordinal circular data**

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In this paper, we discuss the distribution of a circular random variable having positive probabilities only in uniformly spaced directions. We used the wrapping of geometric distribution to construct two discrete distributions on the circle. The distributional properties and estimation procedures for the underlying model parameters are discussed. Some tests for the distribution are proposed. Simulation studies are done to illustrate the distribution. Then, using the distribution, we carry out the time-series analysis of wind direction data where the sample space also contains the no wind state.