

Improving prediction performance of star parameters using functional models

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Abstract: This talk investigates the problem of prediction of star parameters, based on its spectrum. The knowledge of these parameters permits to infer on the nature of the star. From a statistical point of view, the spectra of different stars can be represented as functional data. Therefore, a two-steps procedure decomposing the spectra in a functional basis combined with a regression method of prediction is proposed. We also use a bootstrap methodology to build confidence intervals for the star parameters. A practical study is also provided to illustrate the numerical performance of our approach. This is a joint work with Michel Cure and Sylvain Robbiano.