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Suneel Babu Chatla* (sbchatla@utep.edu) and **Galit Shmueli**. *Functional Regression with the COM-Poisson Distribution: a Study of Modeling COVID-19*. Preliminary report.

We develop a functional regression model for the Conway-Maxwell-Poisson(CMP) distribution (Shmueli et al., 2005) which is a flexible two-parameter generalization of the Poisson distribution and can model both underdispersion and overdispersion in the count data. For model estimation, we consider the component-wise boosting algorithm (Hothorn et al., 2014). The advantage of this approach is that it can provide model selection and handle large number of covariate effects which could be more than the number of observations. One of the noted drawbacks of boosting algorithm is its tendency to select a relatively high number of non-informative covariates. To overcome this limitation, our approach also incorporates stability selection to investigate the importance of covariates by repeatedly subsampling the data. We illustrate the usefulness of our method by modeling the countrywide daily confirmed deaths due to COVID-19 (Received August 04, 2020)