

On Circular Density Estimation - Fejér Kernel Approach

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Abstract. Density estimation is one of the most important problems in nonparametric statistics, mainly due to its applications. However, in the case of circular data, it is insufficiently explored. Here we aim to fill in this gap by exploring the use of Fejér kernel in the context of density estimation. We present some theoretical and empirical properties of such estimators, both in the classical setup, dealing with a random sample of circular data, and in the presence of the measurement error. The case of Berkson error model for circular data is considered here for the first time.

Keywords: Fejér polynomials; circular data; Berkson error.