

# On the Persistent Betti Function and Their Asymptotic Normality

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## **Abstract**

Persistent Betti numbers are a major tool in persistent homology, a subfield of topological data analysis. Many tools in persistent homology rely on the properties of persistent Betti numbers considered as a two-dimensional stochastic process. We discuss the central role of the persistent Betti function in the context of statistics, and present some novel limit theorems for the multivariate case. This is joint work with J. Krebs, UC Davis.