



THE UNIVERSITY OF
CHICAGO

Department of Statistics

MASTER'S THESIS PRESENTATION

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Efficient Calculation of Improved Simultaneous Testing Bands for
QQplots

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ABSTRACT

Quantile-Quantile plots (QQplots) are often difficult to interpret because it is unclear how large the deviation from the theoretical distribution must be to indicate a lack of fit. Current packages and algorithms towards this end either do not ensure a robust Type I error rate, are too slow, or are under-powered to deviations in the tails of the distribution. In this paper, we present an efficient algorithm that computes simultaneous testing bands for QQplots. These bands have a variety of desirable properties, including being fast to compute and being sensitive in the tails of the null distribution.