

**UTSA College of Business**  
**Department of Management Science and Statistics**  
**Research Seminar Series**

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“Prior-free Bayes Factors Based on Data Splitting”

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**Abstract**

Bayes factors that do not require prior distributions are proposed for testing one parametric model versus another. These Bayes factors are relatively simple to compute, relying only on maximum likelihood estimates, and are Bayes consistent at an exponential rate for nested models even when the smaller model is true. These desirable properties derive from the use of data splitting and the simplicity of Bayes factors for comparing fully specified models. A simulation study explores practical concerns, and the methodology is illustrated with civil engineering data involving compressive strength of concrete.