

Carlos Matrán, Universidad de Valladolid
Testability of stochastic dominance.

Abstract: The stochastic order is a very suggestive concept that has great limitations for the statistical testing setting. The available theory allows, at most, checking that there is not evidence enough to reject such a hypothesis. In this talk we will explore alternative approaches based on measuring the degree of stochastic dominance and allow testing the existence of a high agreement with stochastic dominance in the two-sample problem. Between the explored possibilities we will stress on a fully nonparametric approach that resorts to the concept of similarity between probability measures. We will see as the introduction of the contamination model in the stochastic dominance setting leads to quantify the level of dominance and provides suitable tools for the analysis. Our arguments are based on probability metrics and trimming methods. Through the talk we will also give evidence of the complexity of the underlying mathematical problems.