

RUTGERS UNIVERSITY
DEPARTMENT OF STATISTICS AND BIOSTATISTICS
HILL CENTER #501, BUSCH CAMPUS, PISCATAWAY

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Seminar

Speaker: Juan Cuesta-Albertos, Cantabria University, Spain

Title: Trimmed Comparison of Distributions

Date: Wednesday April 15, 2009

Time: 3:20 PM

Place: 552 Hill Center

Abstract

In this talk we introduce an analysis of similarity of distributions based on the L_2 -Wasserstein distance between trimmed distributions. The main innovation is the use of the impartial trimming methodology, already considered in robust statistics, which we adapt to this setup: Instead of simply removing data at the tails for providing some robustness to the similarity analysis, we develop a data-driven trimming method aimed at maximizing similarity between distributions. Dissimilarity is then measured in terms of the distance between the optimally trimmed distributions. We provide illustrative examples and give some asymptotic results to justify the use of this methodology in applications. We also present some results to assess when a sample is “mostly normal” and analyze what happens if we over-trim in the initial trimming step.

This talk is based on some joint research with:

Pedro Cesar Alvarez-Esteban, Universidad de Valladolid, Spain

Eustasio del Barrio, Universidad de Valladolid, Spain

Carlos Matran, Universidad de Valladolid, Spain