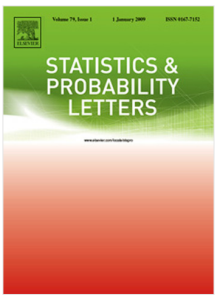
Accepted Manuscript



Correlation extrapolated

Pierre-André G. Maugis

PII: S0167-7152(18)30282-7
DOI: https://doi.org/10.1016/j.spl.2018.08.007
Reference: STAPRO 8311

To appear in: *Statistics and Probability Letters*

Received date : 25 October 2017
Revised date : 30 May 2018
Accepted date : 16 August 2018

Please cite this article as: Maugis P.G., Correlation extrapolated. *Statistics and Probability Letters* (2018), https://doi.org/10.1016/j.spl.2018.08.007

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT
LaTeX Souce Files
Click here to download LaTeX Souce Files: ECC.tex

Correlation Extrapolated

Pierre-André G. Maugis
University College London

Abstract

We provide consistent and asymptotic normal estimators of correlation that corrects the bias induced by partial samples. Through examples, we show that the estimators behaves well in small-sample and yields powerful methodologies for non-linear regression as well as dependence testing.

Keywords: 62H20; 62H10

1. Introduction

We provide methods to estimate and compare correlation estimates based on partial samples. We do so by deriving under minimal assumptions the properties of a new dependence parameter: event conditional correlation.

We define event conditional correlation as the correlation of two variables X and Y conditionally to an event $\mathcal{A}$ and denote it $\rho_{XY\,|\,\mathcal{A}}$. Event conditional correlation is the natural correlation parameter when working with partial samples. Consider the case where one is able to measure (X, Y) only if a third random variable Z is large enough, say larger than a threshold z. One classical example is knowing the grades of students (the variables X and Y), only if these students had high enough scores in high school (the

Email address: p.maugis@ucl.ac.uk (Pierre-André G. Maugis)

Download English Version:

https://daneshyari.com/en/article/11029699

Download Persian Version:

https://daneshyari.com/article/11029699

Daneshyari.com