

COMPUTATIONAL STATISTICS AND DATA ANALYSIS

CALL FOR PAPERS

Special Issue on

TOTAL LEAST SQUARES AND ERRORS-IN-VARIABLES MODELING

<http://www.elsevier.com/locate/csda>

We are inviting submissions for a special issue of Computational Statistics and Data Analysis dealing with total least squares methods and errors-in-variables models.

The total least squares (TLS) method is a numerical linear algebra tool for solving approximately overdetermined systems of equations $Ax = b$, where both the vector b as well as the matrix A are assumed perturbed. Since its definition by Golub and Van Loan in 1980, the classical TLS method has been extended to solve weighted, structured, and regularized TLS problems and was applied in signal processing, system identification, computer vision, document retrieval, computer algebra, and other fields.

Errors-in-variables models, also known as measurement error models, are an alternative to the classical regression model in statistics when both the dependent as well as the independent variables are subject to errors. Errors-in-variables models are closely related to TLS methods and provide statistical justification for the deterministic approximation criteria used in the numerical linear algebra literature.

In this special issue, we are aiming at the synergy of statistics and computations that provides better computational methods for statistically meaningful estimators. Key areas are:

Concepts and Properties : structured and weighted TLS, other norms, misfit versus latency errors, non-linear measurement error models, dynamic errors-in-variables, hypersurface fitting, statistical, numerical, robustness and optimization aspects

Algorithms : real-time, adaptive, recursive, neural, iterative algorithms, based on SVD or related matrix/tensor decompositions, architectures, complexity, accuracy, regularization, convergence, lower rank approximations

Applications : array signal and image processing, filtering, system identification, computer vision, document retrieval, spectral analysis, harmonic retrieval, direction finding, geology, chemistry, biomedicine

The papers should have a computational or empirical component in order to be considered for publication. The papers must further contain original unpublished work that is not being submitted for publication elsewhere. Submissions will be refereed according to standard procedures for Computational Statistics and Data Analysis. Information about the journal can be found at

<http://www.elsevier.com/locate/csda>.

The DEADLINE for submissions is October 1, 2006.

The notification of decision is December 15, 2006

Electronic submission is requested. Please e-mail a postscript or PDF file of your manuscript double spaced and as concise as possible to: ida.tassens@esat.kuleuven.be

Special issue editors:

Professor Sabine Van Huffel
K.U. Leuven, Dept. Elektrotechniek
ESAT-SCD (SISTA), Kasteelpark Arenberg 10
B-3001 Leuven-Heverlee, Belgium

Professor Chi-Lun Cheng
Institute of Statistical Science,
Academia Sinica,
Taipei, Taiwan, R.O.C

Dr. Nicola Mastronardi
Istituto per le Applicazioni
del Calcolo "M.Picone" sez. Bari
National Council of Italy
via G. Amendola 122/D
I-70126 Bari, Italy

Professor Chris Paige
McGill University
School of Computer Science
3480 University Street
Montreal, PQ, Canada H3A 2A7

Professor Alexander Kukush
Kyiv National Taras Shevchenko University,
Volodymyrska st. 60, 01033, Kyiv, Ukraine