

THE ANNALS of APPLIED STATISTICS

*AN OFFICIAL JOURNAL OF THE
INSTITUTE OF MATHEMATICAL STATISTICS*

Special Section on Statistics and Astronomy

Introduction to papers on astrostatistics	THOMAS J. LOREDO, JOHN RICE AND MICHAEL STEIN	1
Handbook for the GREAT08 Challenge: An image analysis competition for cosmological lensing	SARAH BRIDLE, JOHN SHAWE-TAYLOR, ADAM AMARA, DOUGLAS APPLEGATE, SREEKUMAR T. BALAN, JOEL BERGE, GARY BERNSTEIN, HAKON DAHLE, THOMAS ERBEN, MANDEEP GILL, ALAN HEAVENS, CATHERINE HEYMANS, F. WILLIAM HIGH, HENK HOEKSTRA, MIKE JARVIS, DONNACHA KIRK, THOMAS KITCHING, JEAN-PAUL KNEIB, KONRAD KUIJKEN, DAVID LAGATUTTA, RACHEL MANDELBAUM, RICHARD MASSEY, YANNICK MELLIER, BABACK MOGHADDAM, YASSIR MOUDDEN, REIKO NAKAJIMA, STEPHANE PAULIN-HENRIKSSON, SANDRINE PIRES, ANAIS RASSAT, ALEXANDRE REFREGIER, JASON RHODES, TIM SCHRABBACK, ELISABETTA SEMBOLONI, MARINA SHMAKOVA, LUDOVIC VAN WAERBEKE, DUGAN WITHERICK, LISA VOIGT AND DAVID WITTMAN	6
Efficient blind search: Optimal power of detection under computational cost constraints	NICOLAI MEINSHAUSEN, PETER BICKEL AND JOHN RICE	38
Statistical challenges in the analysis of Cosmic Microwave Background radiation	PAOLO CABELLA AND DOMENICO MARINUCCI	61
Streaming motion in Leo I	BODHISATTVA SEN, MOULINATH BANERJEE, MICHAEL WOODROOFE, MARIO MATEO AND MATTHEW WALKER	96
Statistical analysis of stellar evolution	DAVID A. VAN DYK, STEVEN DEGENNARO, NATHAN STEIN, WILLIAM H. JEFFERYS AND TED VON HIPPEL	117
Inference for the dark energy equation of state using Type IA supernova data	CHRISTOPHER R. GENOVESE, PETER FREEMAN, LARRY WASSERMAN, ROBERT C. NICHOL AND CHRISTOPHER MILLER	144

Articles

A simple forward selection procedure based on false discovery rate control	YOAV BENJAMINI AND YULIA GAVRILOV	179
Bayesian model comparison and model averaging for small-area estimation	MURRAY AITKIN, CHARLES C. LIU AND TOM CHADWICK	199
Modeling substitution and indel processes for AFLP marker evolution and phylogenetic inference	RUYIAN LUO AND BRET LARGET	222
Assessing multivariate predictors of financial market movements: A latent factor framework for ordinal data	PHILIPPE HUBER, OLIVIER SCAILLET AND MARIA-PIA VICTORIA-FESER	249
Spatial interpolation of high-frequency monitoring data	MICHAEL L. STEIN	272
On multi-view learning with additive models	MARK CULP, GEORGE MICHAILIDIS AND KJELL JOHNSON	292
Time series analysis via mechanistic models	CARLES BRETO, DAIHAI HE, EDWARD L. IONIDES AND AARON A. KING	319
Distribution-free cumulative sum control charts using bootstrap-based control limits	SNIGDHANSU CHATTERJEE AND PEIHUA QIU	349
Practical large-scale spatio-temporal modeling of particulate matter concentrations	CHRISTOPHER J. PACIOREK, JEFF D. YANOSKY, ROBIN C. PUETT, FRANCINE LADEN AND HELEN H. SUH	370
\mathcal{G} -SELC: Optimization by sequential elimination of level combinations using genetic algorithms and Gaussian processes	ABHYUDAY MANDAL, PRITAM RANJAN AND C. F. JEFF WU	398
High frequency market microstructure noise estimates and liquidity measures	YACINE AÏT-SAHALIA AND JIALIN YU	422
Multilevel functional principal component analysis	CHONG-ZHI DI, CIPRIAN M. CRAINICEANU, BRIAN S. CAFFO AND NARESH M. PUNJABI	458
Letter to the Editor	DONALD B. MACNAUGHTON	489