

**Program**  
**International Conference on Robust Statistics, 2015**  
**Monday (12th January)**

Registration Desk will remain open from 8.30am onwards

PJA: Platinum Jubilee Auditorium (First Floor, Platinum Jubilee Building)

NAB1: New Academic Building Room 1 (Ground Floor, A. N. Kolmogorov Bhavan)

NAB2: New Academic Building Room 2 (Ground Floor, A. N. Kolmogorov Bhavan)

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10.00am-10.45am: **Opening Ceremony** (Platinum Jubilee Auditorium)

**Bimal K. Roy** (Director, ISI: Welcome Address)

**Jayanta K. Ghosh** (Professor Emeritus: Chief Guest)

**Peter J. Rousseeuw** (On behalf of the ICORS Steering Committee)

**Elvezio M. Ronchetti** (On behalf of the ICORS 2015 Scientific Committee)

**Ayanendranath Basu** (Vote of Thanks)

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10.45am-11.00am: Tea Break

11.00am-12.00noon: **Plenary Lecture 1** [PJA]  
*Robust recovery and detection of structured signals*  
**T. Tony Cai**  
Chair: **Peter Rousseeuw**

12.00noon-12.15pm: Tea Break

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12.15pm-12.55pm: **Contributed Paper Sessions C1 and C2**

- **C1 (Statistical Methods for High Dimensional Data; 12.15pm – 12.55pm)** [PJA]

Chair: **Arnab Laha**

*Hypothesis testing for high dimensional sparse binary regression*

**Rajarshi Mukherjee**, N. S. Pillai and X. Lin

*Distribution-free run tests for high dimensional data*

**Munmun Biswas**

- **C2 (Clustering and Convex Optimizations; 12.15pm – 12.55pm)** [NAB1]

Chair: **Georgy Shevlyakov**

*A consistent convex clustering framework*

**Gourab Mukherjee** and P. Radchenko

*Determining the number of clusters using multivariate ranks*

**Mohammed Baragilly** and B. Chakraborty

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12.55pm-1.15pm **Group Photo**

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1.15pm-2.30pm: **LUNCH<sup>1</sup>**

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2.30pm-4.30pm: **Invited Paper Sessions I1 and I2**

- **I1 (Robust Estimation for High Dimensional Data; 2.30pm-4.30pm)** [PJA]

Organizer and Chair: **Elvezio Ronchetti**

*Robust variable selection and inference in high dimensional regression*

**Soumendra N. Lahiri**

*Divergence based inference for regression problems: uncertainty assessment, robustness, and efficiency*

**Anand Vidyashankar**

*Local optima of nonconvex M-estimators*

**Po-Ling Loh**

*Robust estimators for high dimensional generalized linear models*

**Marco Avella-Medina** and E. Ronchetti

- **I2 (Robust Methods for Complex Data; 2.30pm-4.30pm)** [NAB1]

Organizer and Chair: **Alan Welsh**

*Fitting robust monotone polynomials*

**Samuel Müller**

*Robust second-order accuracy testing procedures: hopes and challenges*

**Stephane Heritier**, S. N. Lo and E. Ronchetti

*Partially linear transformation models for interval-censored data with a cured proportion*

**L. Xiang** and T. Hu

*Visualising variable selection with mplot*

**G. Tarr**, A. H. Welsh and S. Müller

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4.30pm-4.45pm: Tea Break

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4.45pm-5.45pm: **Contributed Paper Sessions C3 and C4**

- **C3 (Robust Methods in Signal and Image Analysis; 4.45pm-5.25 pm)** [NAB1]

Chair: **Liming Xiang**

*Robust asymptotically stable detection of a weak signal*

**Georgy Shevlyakov**

*Robust regression procedure for model fitting with application to image analysis*

**R. Reka** and R. Muthukrishnan

- **C4 (Robust Estimation and Outlier Detection; 4.45pm-5.45 pm)** [PJA]

Chair: **Anil K. Ghosh**

*Robust tests and estimates for one or more allometric lines*

**S. Taskinen** and D. I. Warton

*SB-Robustness of estimators*

**Arnab Laha**

*A survey on outlier detection methods*

**G. Poonkuzhali** and R. Muthukrishnan



## Tuesday (13th January)

10.00am-11.00am: **Plenary Lecture 2** [PJA]  
*Flexible distributions as an approach to robustness: the skew-t case*  
**Adelchi Azzalini**  
Chair: **Pranab K. Sen**

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11.00am-11.15am: Tea Break

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11.15am-1.15pm: **Invited Paper Sessions I3 and I4**

• **I3 (Robustness Based on Data Depth; 11.15am-1.15pm)** [PJA]

Organizer: **Claudio Agostinelli**

Chair: **Soumendra N. Lahiri**

*Monge-Kantorovitch depth*

**Marc Hallin**

*Depth and deepest point in infinite dimensions*

**A. Chakraborty** and P. Chaudhuri

*Functional outlier detection with a local spatial depth*

**C. Sguera**, P. Galeano and R. Lillo

*Local depth and nonparametric density estimation*

**C. Agostinelli** and J. F. Rosco Nieves

• **I4 (Robustness in Functional Data and Nonparametrics: 11.15am-1.15pm)** [NAB1]

Organizers: **Graciela Boente** and **Andreas Christmann**

Chair: **Michel Broniatowski**

*Robust principal component analysis for power transformed compositional data*

**A. H. Welsh**, J. L. Scealy, P. D. Caritat, E. C. Grunsky and M. T. Tsagris

*The  $DD^G$ -classifier: an improved  $DD$ -classifier valid for functional data*

**Juan A. Cuesta-Albertos**, M. Febrero-Bande and M. Oviedo de la Fuente

*Robust backfitting estimators for additive models*

**Matias Salibian-Barrera**, G. Boente and A. Martinez

*Mortality and life expectancy forecasting for a group of populations in developed countries: a multilevel functional data method*

**Han Lin Shang**

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1.15pm-2.30pm: **LUNCH<sup>1</sup>**

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2.30pm-3.30pm: **Plenary Lecture 3** [PJA]  
*From univariate depth to functional depth*  
**Peter J. Rousseeuw**, M. Hubert and P. Segaert  
Chair: **Bimal K. Roy**

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3.30pm-3.45pm: Tea Break

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3.45pm-5.15pm: **Invited Sessions I5 and I6**

• **I5 (Regression and Mixture Regression: 3.45pm-5.15pm)**

[PJA]

Organizer: **Olcay Arslan**

Chair: **Claudio Agostinelli**

*A robust proposal for estimating mixtures of factor analyzers models based on trimming and restrictions*

**A. Mayo-Iscar**, L. A. Garcia-Escudero, A. Gordaliza, F. Greselien, S. Ingrassia and C. Matran

*Robust mixture regression based on the mixture of different distributions*

**Olcay Arslan**

*Robust bounded influence tests for independent but non-homogeneous observations with application to linear regression*

**A. Ghosh** and A. Basu

• **I6 (Statistical Inference based on Divergence Measures; 3.45pm-5.15pm)**

[NAB1]

Organizer: **Leandro Pardo**

Chair: **Luis A. Garcia-Escudero**

*Empirical minimum divergence inference under L-moments*

**M. Broniatowski** and A. Decuringe

*Statistical inference tools by means of scaled Bregman distances*

**W. Stummer** and A. L. Kisslinger

*Minimum risk equivariant estimate for moment condition models via divergences*

**A. Keziou** , M. Broniatowski and J. Jureckova

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## Wednesday (14th January)

Full day city tour, followed by Conference Banquet at Eco-Vista Park in the evening. Exact timings to be notified later.

- The organizers will provide the buses for the city tour, and conference volunteers will accompany the conference participants. Participants will have to pay the entrance fees to exhibits wherever applicable.
  - Conference Banquet is free for all registered participants.
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## Thursday (15th January)

10.00am-11.30am: **Invited Paper Sessions I7 and I8**

• **I7 (Robust Dimension Reduction; 10.00am-11.30am)**

[PJA]

Organizer and Chair: **Hannu Oja**

*Local and global measures of robustness in dimensionality reduction*

**S. Chenouri**, J. Liang and C. G. Small

*Is it 'plug and play' or 'plug and pray' in robust multivariate statistics?*

**K. Nordhausen** and D. E. Tyler

*Advances in invariant co-ordinate selection*

**G. Van-Bever**, R. Sabolova , F. Critchley , H. Oja and B. Li

• **I8 (Robust Methods in Statistical Computing; 10.00am-11.30am)**

[NAB1]

Organizer and Chair: **Peter Filzmoser**

*Robust and sparse estimation of inverse covariance matrices in presence of cell-wise contamination*

**C. Croux** and V. Ollerer

*Adaptive choice of parameters in robust clustering*

**L. A. Garcia-Escudero**, A. Farcomeni, A. Gordaliza and A. Mayo-Iscar

*Robust and sparse PLS for binary classification*

**I. Hoffmann** P. Filzmoser and S. Serneels

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11.30am-11.45am: Tea Break

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11.45am-12.45pm: **Contributed Paper Sessions C5 and C6**

• **C5 (Predictive Models; 11.45am-12.45pm)**

[PJA]

Chair: **Germain Van Bever**

*On the robustness of risk measures*

**M. Zhelonkin** and V. Chavez-Demoulin

*From classical business failure prediction models to business financial models for resilience: using advanced statistical methodologies*

**R. Pal**, K. Kupka, A. Aneja and J. Militky

*A stochastic approach on uncertainty estimation of Indian Summer Monsoon Rainfall (ISMR) and asymptotic stability and efficiency analysis of EQUINOO indices*

**T. Das** and G. K. Sen

• **C6 (Robust Regression and Quality Control; 11.45am-12.45pm)**

[NAB1]

Chair: **Klaus Nordhausen**

*Weighted  $L_1$ -penalized corrected quantile regression for high dimensional measurement error models*

**A. Kaul** and H. L. Koul

*Small sample GEE estimation of regression parameters for longitudinal data*

**S. Paul** and X. Zhang

*On robust alternatives to  $\bar{X}$  and  $S$  control charts: a minimum distance approach*

**K. S. Dubey** and A. Basu

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12.45pm-2.30pm: **Visit to the Geology Museum, followed by LUNCH<sup>1</sup>**

(The Geology museum was first opened for public viewing in 1977. The main attraction of the museum is an almost complete fossil skeleton of a 47 feet long dinosaur from the early Jurassic period (about 160 million years back). This fossil was discovered by ISI geologists during a 1958 exploration in the Pranahita-Godavari valley. It was excavated during a subsequent expedition in 1960-61. The dinosaur has been christened *Barapasaurus tagorei*. The name is a coinage of *Bara pa*, which means ‘big leg’ in Hindi, *saurus*, which is a standard suffix in zoological names of lizard-like creatures, and *Tagore*. The discovery coincided with the birth centenary year of the poet Rabindranath Tagore, who was a well-wisher of ISI.)

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2.30pm-3.50pm: **Contributed Paper Sessions C7 and C8**

• **C7 (Multivariate and Descriptive Statistics; 2.30pm-3.50pm)**

[NAB1]

Chair: **Irene Hoffmann**

*A weighted robust estimator of multivariate location and scatter*

**E. D. Boobalan** and R. Muthukrishnan

*On multivariate forward search estimator for location and scatter parameter in elliptical model*

**C. Chakraborty** and S. S. Dhar

*Robust estimators of multivariate location and scatter – a review*

**R. Muthukrishnan**

*Maximally robust skewness estimation*

**V. Öllerer** and K. Vakili

• **C8 (Robust Methods in Linear Regression; 2.30pm-3.50pm)**

[NAB2]

Chair: **Sudhir Paul**

*Bayes variable selection in semiparametric linear models*

**S. Kundu** and D. B. Dunson

*Efficient and adaptive linear regression in semi-supervised settings*

**A. Chakraborty** and T. Cai

*On testing linearity of regression models in nonregular case*

**Z. Mohdeb** and A. Mokkaem

*GM estimator based variable selection method in linear regression*

**K. S. Shende** and D. N. Kashid

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3.50pm-4.05pm Tea Break

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4.05pm-5.25pm **Contributed Paper Sessions C9 and C10**



• **C9 (Robust Methods in Design of Experiments; 4.05pm-5.25pm)**

[NAB1]

Chair: **Mausumi Bose**

*A revisit to the determination of optimum size and shape of plots in field trials*

Satyabrata Pal, **Goutam Mandal** and Kajal Dihidar.

*Robust optimal cluster designs*

**S. P. Singh** and S. Mukhopadhyay

*A series of robust block designs for test treatment versus control with correlated observations or plots*

**A. Majumder** , M. Kumar , G. R. Manjunatha and S. G. Patil

*Robustness of circular neighbour balanced BIB designs with correlated observations for missing a single observation or a single block*

**G. R. Manjunatha** A. Majumder and M. Kumar

• **C10 (Statistical Methods for Time Series and Dependent Data; 4.05-5.25pm)**[NAB2]

Chair: **Anup Dewanji**

*New blind source separation methods for multivariate conditionally heteroscedastic time series*

**M. Matilainen**, K. Nordhausen and H. Oja

*Nonparametric sequential detection of a steady state*

**M. Pollak** and T. Hope

*Regression under Cox's model for recall-based time-to-event data in observational studies*

**S. Mirzaei** and D. Sengupta

*Studying long-range correlation within Sunspot number time series using detrended fluctuation analysis*

**S. Chattopadhyay** and G. Chattopadhyay

6.00pm-7.30pm: **Cultural Program**

**BANDISH FUSION** by Grammy nominated tabla/percussion maestro Subhen Chatterjee & his unique fusion band KARMA. More details about the band can be found at [www.bandishfusion.com](http://www.bandishfusion.com)

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## Friday (16th January)

10.00am-11.30am: **Invited Paper Sessions I9 and I10**

- **I9 (Miscellaneous Topics in Robustness; 10.00am-11.00am)** [NAB1]

Organizer and Chair: **Domenico Perrotta**

*Robust Methods for heteroskedastic regression*

**M. Riani**, A. C. Atkinson and F. Torti

*Bounded-influence robust estimation of copulas*

**Maria-Pia Victoria-Feser**, S. Guerrier and S. Orso

- **I10 (Non-standard Models in Environmental Studies; 10.00am-11.30am)** [NAB2]

Organizer: **Pranab K. Sen**

Chair: **Matias Salibian-Barrera**

*Diagnostic and treatment for linear mixed models*

**Julio M. Singer**, F. M. M. Rocha and J. S. Nobre

*Some asymptotic properties of pollution indices*

**Aluisio Pinheiro**

*Affine equivariant rank-weighted L-estimation of multivariate location*

**Pranab. K. Sen** , J. Jureckova and J. Picek

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11.30am-11.40am: Tea Break

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11.40am-1.20pm: **Contributed Paper Sessions C11 and C12**

- **C11 (Distribution Theory; 11.40am-1.20pm)** [NAB1]

Chair: **Indranil Mukhopahdyay**

*Robust generalized method of wavelet moments*

**R. Molinari** , S. Guerrier and M. P. Victoria-Feser

*Concomitant of order statistics for bivariate and trivariate pseudo Fréchet distribution*

**K. K. Das** and T. Deb Roy

*On some L-moments of the transmuted Weibull distribution*

**S. Bhattacharjee** , K. K. Das and D. Borthakur

*Geometry of robust estimation on a power-law family*

**M. Ashok Kumar** and R. Sundaresan

*Exponentiated Gumbel distribution revisited via its properties and estimation*

**S. Dey**, T. Dey and S. Mukherjee

- **C12 (Minimum Distance Methods; 11.40am-1.20pm)** [NAB2]

Chair: **Nilotpal Sanyal**

*Statistical inference based on a new weighted likelihood approach*

**Suman Majumder**

*Robust nonparametric curve estimation based on the density power divergences*

**A. K. Kuchibhotla** and A. Basu

*Robust estimation using characteristic functions*

**P. Ghosal**, A. K. Kuchibhotla and A. Basu

*The logarithmic super divergence and its use in statistical inference*

**Avijit Maji**, A. Ghosh and A. Basu

*The B-Exponential divergence and its generalizations with applications to parametric estimation*

**Taranga Mukherjee**, A. Mandal and A. Basu

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1.20pm:        **LUNCH**<sup>1</sup>

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<sup>1</sup>Lunch will be served at the Indian Statistical Institute Guest House on each conference day.