International Astrostatistics Association

IAA Newsletter – Sept 2014

Announcing

Two New Books

Statistical Methods for Astronomical Data Analysis

Asis & Tanuka Chattopadhyay

The Chattopadhyay's *Statistical Methods for Astronomical Data Analysis* is the 3rd volume in the *Springer Series in Astrostatistics,* due to be published October 14, 2014. 349 pages
ISBN-13: 978-1493915064 List price: US$ 109.00; Amazon: US$ 92.26

SPRINGER
http://www.springer.com/statistics/physical+%26+information+science/book/978-1-4939-1506-4

AMAZON
http://www.amazon.com/Statistical-Astronomical-Analysis-Springer-Astrostatistics/dp/1493915061/ref=sr_1_1?s=books&ie=UTF8&qid=1410378538&sr=1-1&keywords=asis+chattopadhyay

FROM THE BACK COVER (selected sentences)
This book introduces "Astrostatistics" as a subject in its own right with rewarding examples, including work by the authors with galaxy and Gamma Ray Burst data to engage the reader. A unique feature of the book is the inclusion of different possible sources of astronomical data, as well as software packages for converting the raw data into appropriate forms for data analysis. Readers can then use the appropriate statistical packages for their particular data analysis needs. The ideas of statistical inference discussed in the book help readers determine how to apply statistical tests. The authors cover different applications of statistical techniques already developed or specifically introduced for astronomical problems, including regression techniques, along with their usefulness for data set problems related to size and dimension. Analysis of missing data is an important part of the book because of its significance for work with astronomical data. Both existing and new techniques related to dimension reduction and clustering are illustrated through examples. There is detailed coverage of applications useful for classification, discrimination, data mining and time series analysis. Later chapters explain simulation techniques useful for the development of physical models where it is difficult or

impossible to collect data. Finally, coverage of the many R programs for techniques discussed makes this book a fantastic practical reference. Readers may apply what they learn directly to their data sets in addition to the data sets included by the authors.

Asis K Chattopadhyay, a member of the IAA Council, is a Professor of Statistics at the University of Calcutta, India. Since 2005 he is also a Visiting Associate of Inter University Center for Astronomy and Astrophysics (IUCAA), Pune, India, and is currently also coordinator of IUCAA Resource Centre at Calcutta University. Tanuka Chattopadhyay, also an IAA member, is a Professor of Applied Mathematics at the University of Calcutta and has had visiting appointments at the Pennsylvania State University, and at the Institut de Planétologie et d'Astrophysique de Grenoble, Joseph Fourier University, France.

This is the first non-edited book in the *Springer Series in Astrostatistics*, and will serve as a standard for others to be published in later years.

The Edge of the Sky: All You Need to Know About the All-There-Is
Roberto Trotta

Roberto Trotta*, The Edge of the Sky: All You Need to Know About the All-There-Is ,* Basic Books, is due to be published 23 September, 2014 (9 Oct in UK); Paperback US$12.79; KINDLE US $9.99 112 pages; ISBN-13**:** 978-0465044719

COMMENT: *The Edge of the Sky* is a book authored by Roberto Trotta, (http://robertotrotta.com/) a theoretical cosmologist in the Astrophysics Group at Imperial College, London, where he is a Senior Lecturer in Astrophysics. Prof Trotta is also a member of the IAA Council. The brief blurb about the book on its web site is given below:

From the big bang to alien worlds, from dark matter to dark energy, from the origins of the universe to its destiny, The *Edge of the Sky* is a tale of the great discoveries and outstanding mysteries in modern cosmology — with a twist. Astrophysicist Roberto Trotta has used only the 1,000 most common words in the English language to talk about difficult concepts in cosmology in beautifully simple terms that everybody can understand.

Roberto is also giving a *Downstairs at Town Hall* presentation titled, *The Universe in 1000 Words*, in Seattle, WA, 30 September, 2014. If you have non-astronomical friends living in the US Northwest and British Columbia, you might suggest that they attend the presentation to learn a bit more about astronomy and the universe. For more information:

http://www.townhallseattle.org/roberto-trotta-the-universe-in-1000-words/

Prof Trotta is also giving similar lectures at various sites in the US and UK. See his website for details: http://robertotrotta.com/

NOTICE

The IAA has grown to over 470 members. 15% are graduate students, and nearly 9% are PostDocs. I believe that it is important to have each of these groups have an identity; i.e. that graduate students have their own blog, their own Newsletter (or a section of this Newsletter), and members who coordinate and advance this activity. I encourage all graduate students and PostDocs with an interest in starting such a section within IAA to contact me before the end of October. We can discuss. Is anyone interested in having a female astrostastician working group or section? We have a 20% female membership.

Reminders

2014 AstroData Hack Week, 15-19 Sept at the Univ. of Washington

Sponsored by the **UW eScience Institute**, with funding from the Alfred P. Sloan Foundation and the Gordon & Betty Moore Foundation.

AstroData Hack Week is a week-long summer school / hack week / unconference focused on astrostatistics and data-intensive astronomy, taking place at the University of Washington

The mornings will be a typical summer school format, with lectures and exercises covering essential skills for working effectively with large astronomical datasets. The afternoons will be entirely unstructured, and offer opportunities for collaborative research, breakout sessions on special topics, and application of the concepts covered during the morning sessions.

The vision is to provide a space to encourage learning, research, collaboration, and sharing of expertise, for the benefit of both young and experienced astronomical researchers alike.

We have space for around 40 attendees, and registration will be open soon! For more information, please see http://uwescience.github.io/AstroData/

The Heilbronn Institute is advertising a fellowship (postdoc) in computational statistics and statistical learning. Both UK and US citizens may be suitable.

The link is:
http://www.bristol.ac.uk/jobs/find/details.html?nPostingID=1722&nPostingTargetID=5833

IAA Working Group in Cosmostatistics
Project Groups

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A more detailed report on IAA Working Group in Cosmostatistics activities, publications and proposals will be given in the October Newsletter

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Led by **Rafael de Souza** <rafael.2706@gmail.com > of the International Research School on Astrophysics, Eötvös Loránd University (Univ of Budapest), the ***IAA Working Group on***

Cosmostatistics is sponsoring various Project Groups, which are formed for the purpose of engaging in the development of software appropriate for cosmological analysis, as well as other more specific research tasks. We currently have 50 members in 5 project groups. Project management is being hosted by the ***Astronomer's Workbench*** <http://awob.mpg.de>, a function of the Max Planck Institutes in Germany. We welcome proposals for additional Project Groups, each of which will result in published results. The aim is to actually do serious research utilizing the resources of both astronomers and statisticians. We also welcome proposals for additional Working Groups.

ASAIP – PORTAL

Be sure to check out the portal if you have not accessed it for awhile. We have been trying to continually update it, and provide new features. You may find something that will be of interest to your research. https://asaip.psu.edu

ISI World Statistics Congress

Rio de Janerio, Brazil

Jul 27-31 July, 2015

We have made two Special Topics Sessions in Astrostatistics proposals for the 2015 World Statistics Congress. A report on the proposals will be provided in the October Newsletter.

29th IAU General Assembly and 226th Meeting, American Astronomical Society

Honolulu, Hawaii, USA

3-14 August, 2015

The IAU Astrostatistics and Astroinformatics Working Group (IAUAAWG) was awarded a Focus Meeting (FM8) at the triennial 29th IAU General Assembly next August in Honolulu, Hawaii. The title of the meeting is: "Statistics and Exoplanets". It is the first astrostatistics Focus Meeting at the IAU General Assembly. The American Astronomical Society (AAS) Summer Meeting is being held at the same location and dates (1st week) as the IAU GA, making it the largest combined gathering of astronomers in history. Hotel rooms are going to be tight, so don't wait too long. I'll report on this event as we get more information.

IAA Membership Registry on ASAIP

I have now had the IAA Registry of membership information, including research interests, placed on ASAIP. I will no longer send it as an attachment with Newsletters. I plan on updating it at least once every other month. Summary member information will be periodically sent to members as an attachment. It will be in Excel format. Send corrections to Hilbe@asu.edu.

Please send me announcement information for inclusion in future Newsletters.

International Astrostatistics Association

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<through 2015>

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