

*School of Statistics for Astrophysics 2017: Bayesian Methodology:
registration is open!

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9-13 Octobre, 2017, L'Escandille, Autrans (France)

This third session of the School of Statistics for Astrophysics will be devoted to the Bayesian methodology.

The interest of this statistical approach in astrophysics probably comes from its necessity and its success in determining the cosmological parameters from observations, especially from the cosmic background fluctuations. But the Bayesian methodology, complementary to the more classical frequentist one, has many applications in physics in general due to its faculty to incorporate a priori knowledge into the inference computation, such as the uncertainties brought by the observational processes.

As for sophisticated statistical techniques, astronomers are not familiar with Bayesian methodology in general, while it is becoming more and more widespread and useful in the literature. This school will form the participants to both a strong theoretical background and a solid practice of Bayesian inference.

The topics that will be covered are:

- * Introduction to R (Didier Fraix-Burnet <<http://ipag.osug.fr/%7Efraixbud/>>, Institut de Planétologie et d'Astrophysique de Grenoble)
- * Foundations of Bayesian Inference (David van Dyk <<http://www.imperial.ac.uk/%7Edvandyk/>>, Imperial College London)
- * Markov chain Monte Carlo (David van Dyk <<http://www.imperial.ac.uk/%7Edvandyk/>>, Imperial College London)
- * Model Building (David van Dyk <<http://www.imperial.ac.uk/%7Edvandyk/>>, Imperial College London)
- * Nested Sampling, Model Selection, and Bayesian Hierarchical Models (Roberto Trotta <<http://astro.ic.ac.uk/rtrotta/home>>, Imperial College London)
- * Approximate Bayesian Computation (Christian Robert <<https://www.ceremade.dauphine.fr/%7Exian/>>, Univ. Paris-Dauphine, Univ. Warwick)
- * Bayesian Nonparametric Approaches to Clustering (Julyan Arbel <<http://www.julyanarbel.com/>>, Université Grenoble Alpes and Inria)

Website: <https://stat4astro2017.sciencesconf.org/>

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