



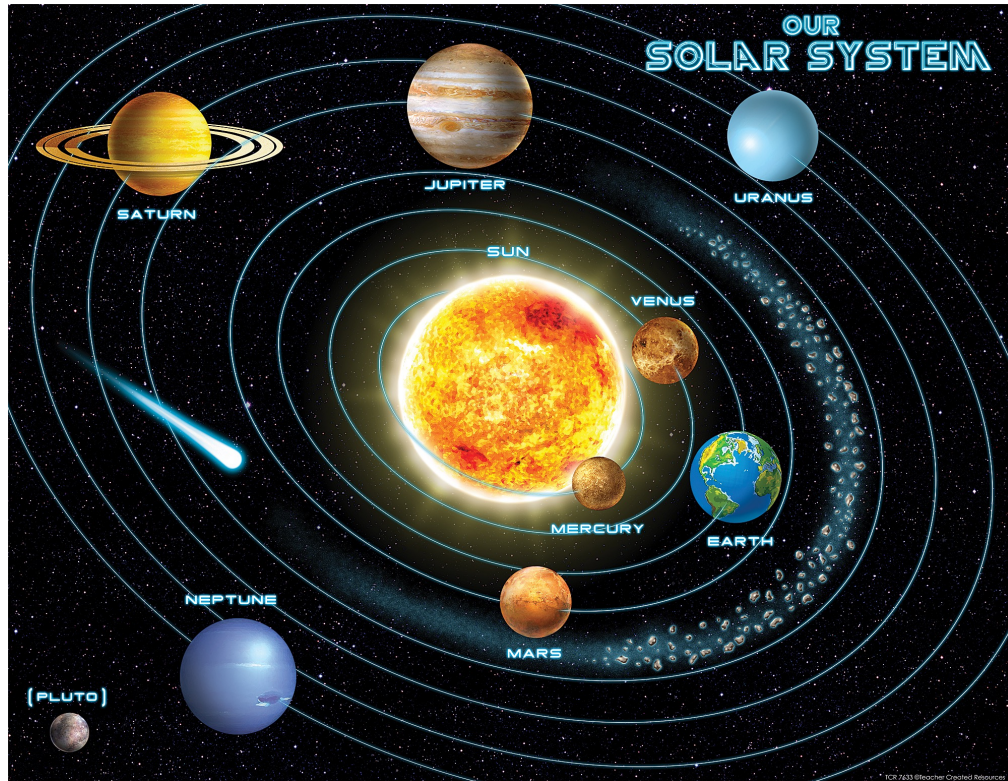
WG3: Planetary systems near and far

Joris De Ridder

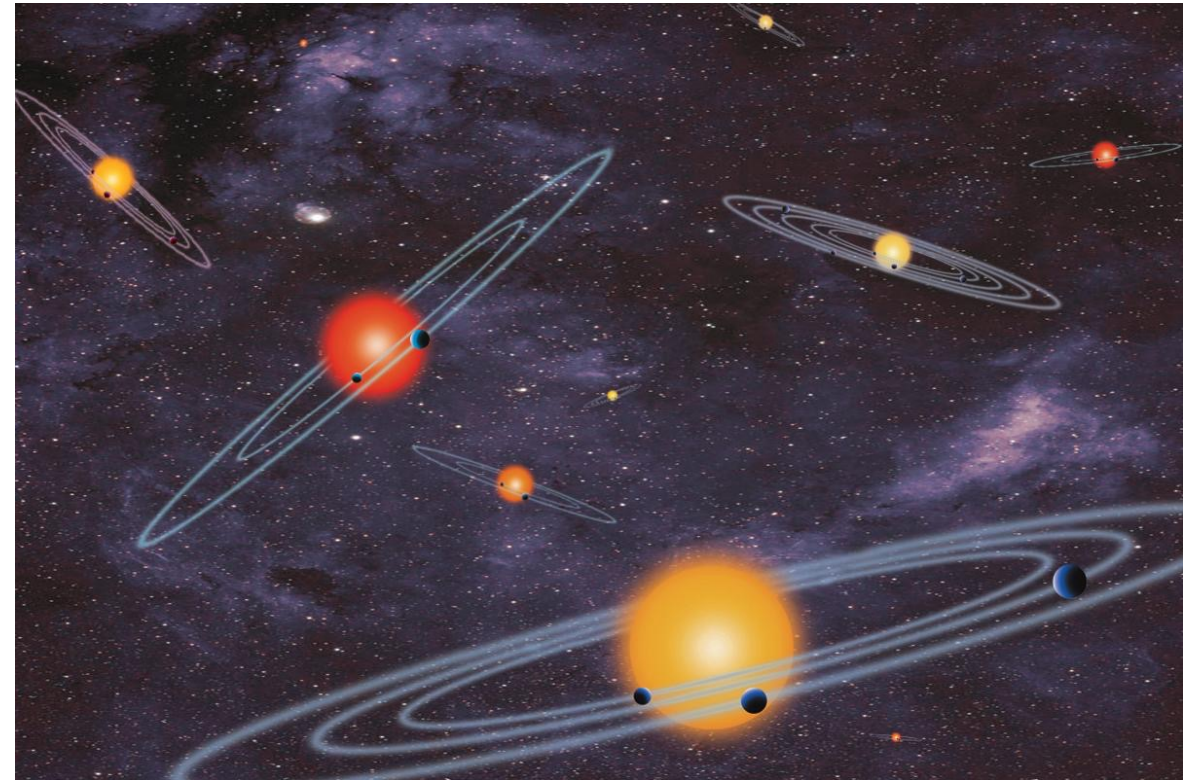
KU Leuven - Belgium

Planetary systems near and far

- This WP covers a huge field:



Asteroids and comets in our own Solar system



Exoplanets as well as the characteristics of their host stars

Coordinators

- Joris De Ridder (B)
- Alessandro Sozzetti (I)
- Vardan Adibekyan (P)
- Julia de Leon (S)

WG3 Workshop
Fundamental stellar parameters
from asteroseismology
in the era of Gaia
Aarhus, June 2022

WG3 Workshop
Asteroids and comets
Helsinki, Sep 2021

WG3/2 Workshop
Frontiers of Stellar Physics:
The theory-Observation Interface
Zagreb, Jan 2020

WG3 School
Exoplanets & astrostatistical
analysis techniques
Geneva, Sep 2022



Frontiers of Stellar Physics: the Theory-Observation Interface

Workshop Overview



(LATE)
REGISTRATION PAGE

News

20200117: new programme and location details added

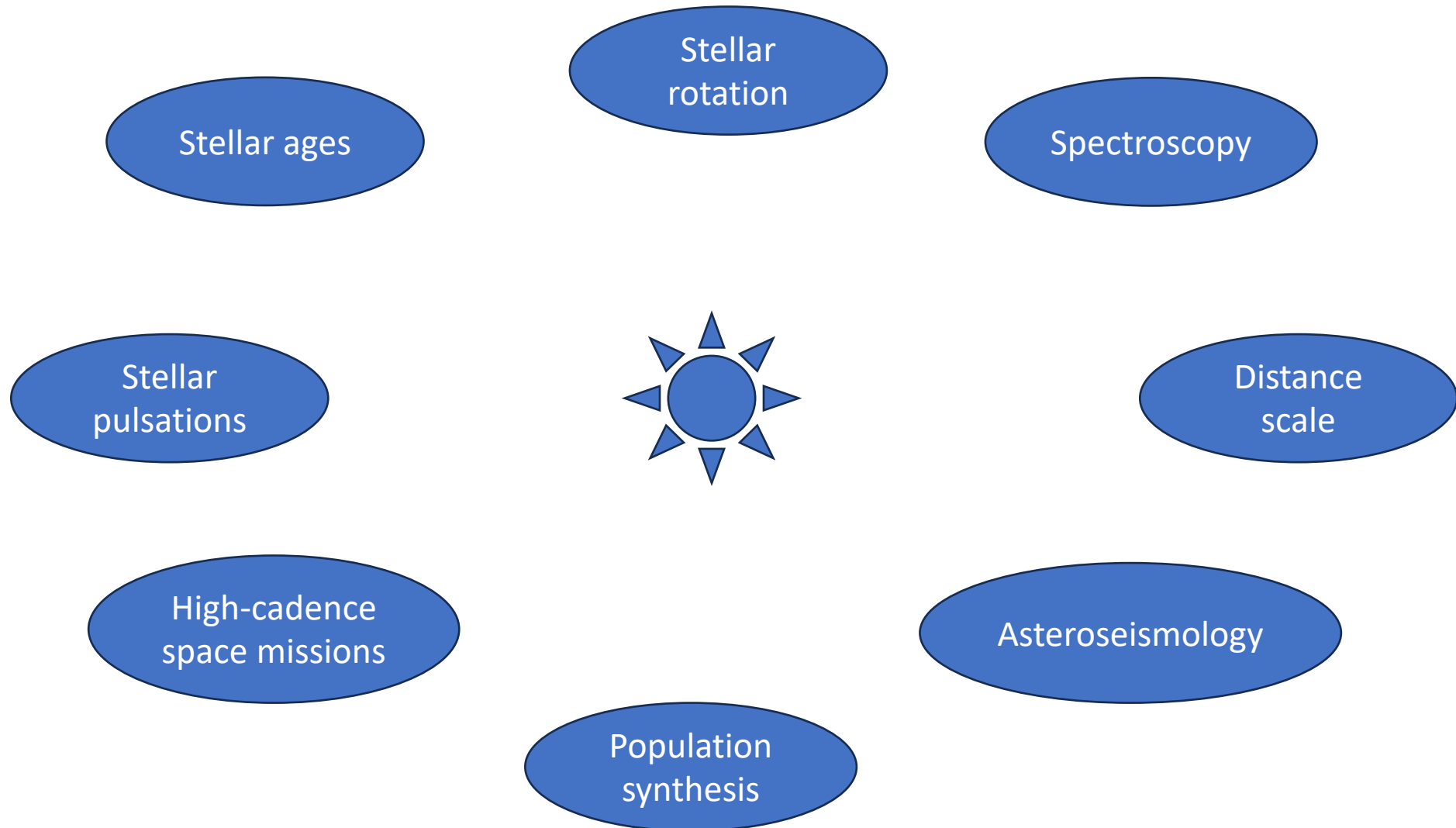
Deadline

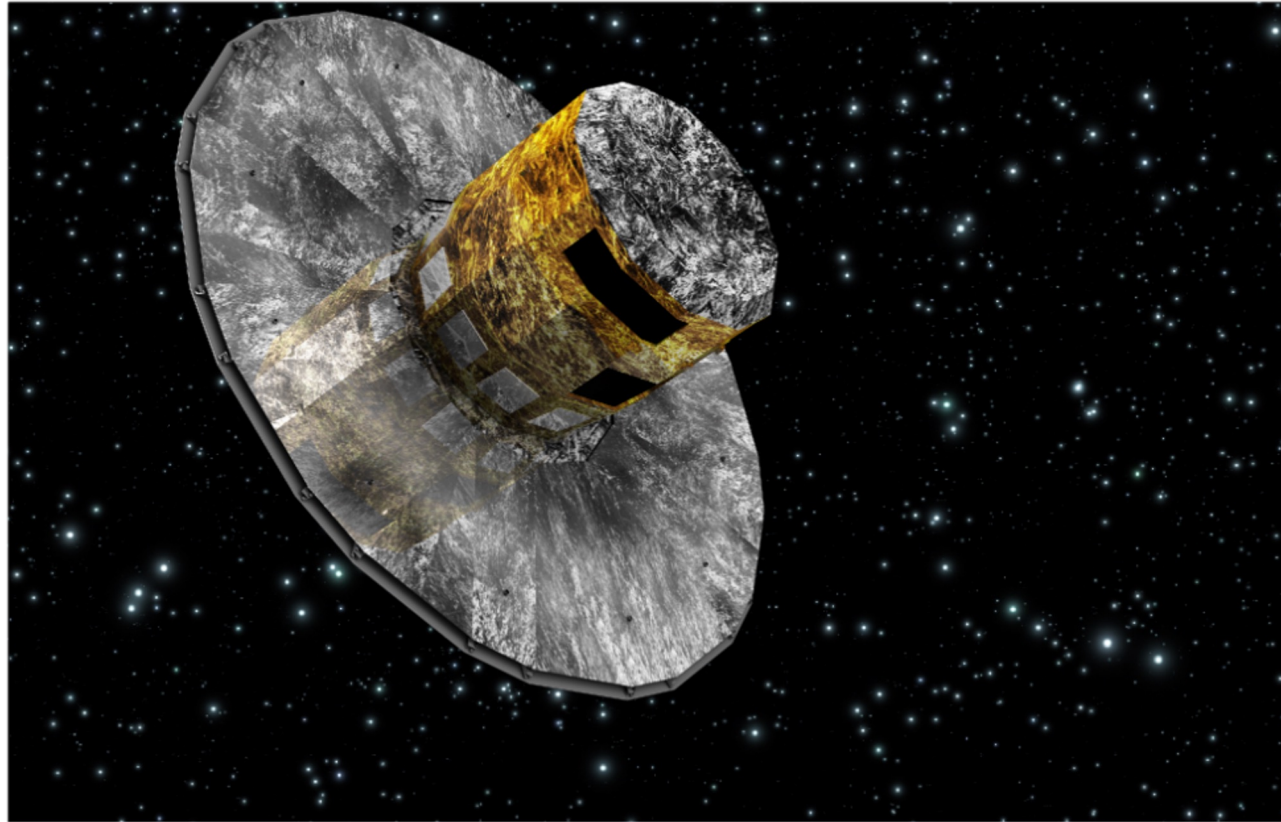
Registration and Abstract
Submission Deadline: **Sun 8 Dec 2019.**

Key Dates

- Deadline for funding support applications: Sun 8 Dec 2019
- Registration Deadline: Sun 8 Dec 2019
- Feedback to those requesting financial assistance: Mon 16 Dec 2019.
- Publication of Programme: Tues 7 Jan 2020
- Workshop: 21-23 Jan 2020. The meeting will start at 09.00 21 Jan and end ~16.00 23

Frontier of stellar physics: the theory-observations interface





Asteroids And Comets: Revealing the History of the Solar System

Workshop of MW-Gaia COST Action 18104

Working Group 3, Planetary Systems Near and Far

Organized by: Department of Physics, University of Helsinki

Venue: Krapu Conference Center, Tuusula, Finland, and online everywhere

Dates: September 28-29, 2021

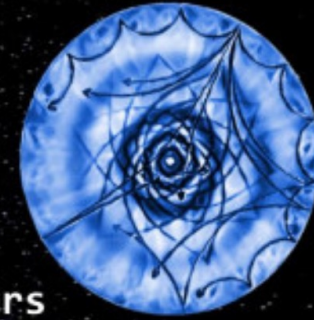


SOC chair: Karri Muinonen

LOC chair: Antti Penttilä



Fundamental stellar parameters from asteroseismology in the era of Gaia



MW-Gaia WG 3 workshop

13-14-15 June 2022, Aarhus University, Denmark

Gaia DR3

Invited Speakers

Ulrike Heiter
Aldo Serenelli
Hannah Wakeford
Joel C. Zinn
Travis Berger
Christina Chiappini
V́ctor Aguirre B́rsen-Koch
Guy R. Davies
Berry Holl
Nienke van der Marel
H́ctor Ćnovas
Vichi Antoci
Nuno C. Santos

Scientific Organising Committee

Mikkel N. Lund

Joris De Ridder

Vincent Van Eylen

Andrea Miglio

Daniel Huber

Local Organising Committee

Rasmus Handberg

Mikkel N. Lund

Brigitte Henderson

SOC chair: Mikkel Lund

LOC chair: Rasmus Handberg



STELLAR ASTROPHYSICS CENTRE



EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY

CARLSBERG FOUNDATION

MW-Gaia Workshop, Aarhus June 2022

Fundamental stellar parameters from asteroseismology in the era of Gaia

MW-Gaia

Programme

Participant list

Venue

Code of Conduct

COVID-19

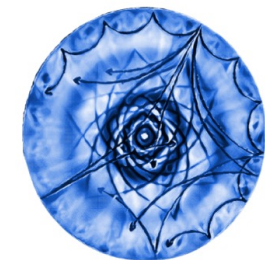
MW-Gaia Aarhus, 13-15th June 2022

By mid-2022 the Gaia DR3 catalogue will be released which will provide a wealth of information for more than a billion stars, including ultra-precise astrometry, radial velocities, photometric colours, binary solutions, etc. This new release will enable even more stringent astrophysical constraints when performing asteroseismic modelling to derive fundamental stellar parameters. This will push forward several asteroseismic applications such as exoplanet host star characterization and galactic archaeology.

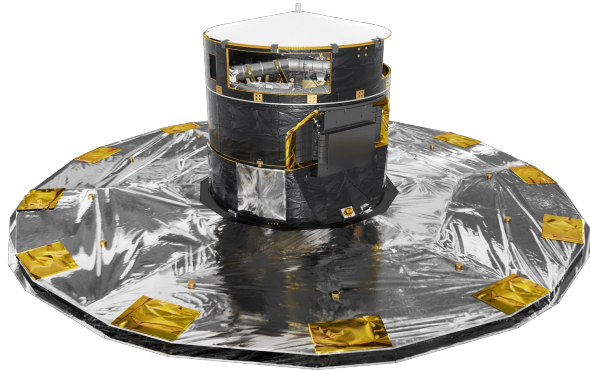
The aim of this workshop is to bring together experts on asteroseismology, galactic archaeology, stellar evolution, exoplanets, and Gaia data. Participants will discuss the synergies that combining Gaia data with datasets from Kepler and TESS offers, as well as the opportunities to eliminate the remaining stumbling blocks.

The workshop is organized by [COST Action MW-Gaia](#) and [Stellar Astrophysics Centre](#) and will take place at Aarhus University, Denmark, on 13-15th June 2022.

There is no conference fee for attending the workshop, and lunches, coffee breaks and the conference dinner will be provided. It is possible to apply for financial support e.g. to cover travel and accommodation costs.



Gathering expertise from different fields



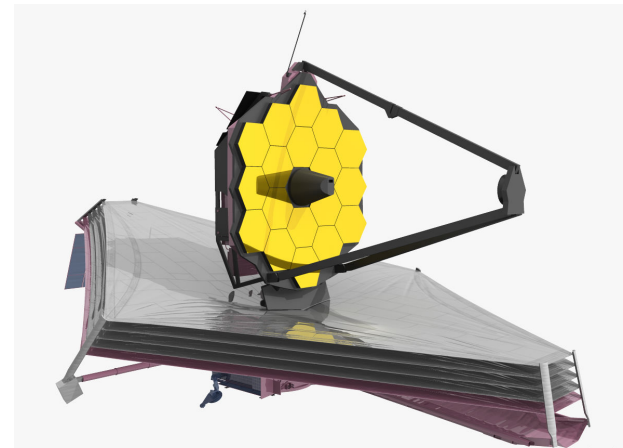
Gaia - Astrometry



TESS – Exoplanet detection
and asteroseismology



ALMA – mm and submm



JWST - IR

Invited speakers

- Ulrike Heiter, Uppsala University, Sweden.
- Aldo Serenelli, Institute of Space Sciences, Spain.
- Hannah Wakeford, University of Bristol, UK.
- Joel C. Zinn, American Museum of Natural History, USA.
- Travis Berger, NASA Goddard Space Flight Center, USA.
- Cristina Chiappini, Leibniz-Institut für Astrophysik Potsdam, Germany.
- Víctor Aguirre Børsen-Koch, Vestas, Denmark.
- Guy R. Davies, University of Birmingham, UK.
- Berry Holl, University of Geneva, Switzerland.
- Nienke van der Marel, Leiden Observatory, NL.
- Héctor Cánovas, Telespazio U.K. for the European Space Agency (ESA/ESAC), Spain.
- Vichi Antoci, DTU Space, Denmark.
- Nuno C. Santos, University of Porto, Portugal.

Scientific Organizing Committee

- Mikkel N. Lund (Chair)
- Joris De Ridder
- Rasmus Handberg
- Vincent Van Eylen
- Andrea Miglio
- Daniel Huber
- Saskia Hekker
- Rhita-Maria Ouazzani
- Tiago Campante

Book of Abstracts

Below you can download the book of abstracts for all talks at the workshop.

[Download: Book of Abstracts](#)

Zenodo Community

We will gather all presentation slides and posters from the meeting in a Zenodo community as "proceedings". We encourage all our presenters to upload their contributions.

[Go to Zenodo Community](#)



Local Organizing Committee

- Rasmus Handberg (Chair)
- Brigitte Henderson
- Louise Aguirre Børsen-Koch
- Jakob Lysgaard Rørsted
- Mikkel N. Lund
- Hans Kjeldsen



For many of them this was their first scientific meeting since the Covid shutdown. So many happy faces at the same time...

Exoplanets and astrostatistical analysis techniques

12–16 Sept 2022
Geneva Observatory
Europe/Zurich timezone



Overview

Contact

✉ eaats2022@gmail.com

Phd students in astronomy are invited to attend the Summer School on "Exoplanets and astrostatistical analysis techniques", sponsored by the MW-GAIA-COST Action and hosted by the department of astronomy at the university of Geneva, Switzerland.

The school will provide a state-of-the-art picture of the astrostatistical data analysis techniques in the field of exoplanet research. It will cover various modern techniques that are currently used to detect and characterize extrasolar planets, including the spectroscopic radial velocity method, the photometric transit method, the astrometric orbit detection method. The astrometric method will become particularly relevant with the upcoming data releases of the Gaia space mission. The school will introduce the students to the relevant astrostatistical background given the particular noise properties of astrophysical datasets, as well as give them hands-on experience with real and synthetic datasets. Participants will learn the limitations of each method and the biases it introduces in the derived sample of exoplanets. The students will have the opportunity to discuss all of these topics with world experts in the field.



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National Centre of Competence in Research



MW-GAIA-COST Action

	Monday Observing methods and models	Tuesday Detection	Wednesday MCMC	Thursday GP	Friday Data combination Advanced Topics
8h15-9h00	Welcome + Information				
Session - 1 9h00-10h30	State of the Art in Exoplanets observing methods (1) J. Sahlmann (ESAC, Spain) Lecture	Lecture on statistics Period search False Alarm Probability S. Zucker	<u>Lecture on statistics</u> Bayesian statistics MCMC Model comparison R. Diaz (Bueno Aires, Argentina)	Lecture on statistics Correlated Noise Gaussian Processes V. Maguire-Rajpaul (Cambridge, UK)	Astrometry Project Hipparcos / GAIA PM anomaly P. Kervella (Obs. Paris- Meudon, France)
30 min break	Coffee	Coffee	Coffee	Coffee	Coffee
Session - 2 11h00-12h30	State of the Art in Exoplanets observing methods (2) X. Dumusque (Uni. Genève) Lecture + short hands-on sessions	Hands-on session Detection Period search - do it yourself S. Zucker/A. Binnenfeld	Lecture on statistics Bayesian statistics MCMC Model comparison R. Diaz	Lecture on statistics Correlated Noise Gaussian Processes V. Maguire-Rajpaul	Astrometry Project Hipparcos / GAIA PM anomaly P. Kervella
12h45 - 13h45	Lunch	Lunch	Lunch	Lunch	Lunch
Session - 3 14h00-15h30	Lecture on statistics Linear regression, likelihood Time series, Correlated Noise S. Zucker (Univ. Tel Aviv, Israel)	Hands-on session <u>Astrometry</u> Searching for planets in GAIA astrometric time series J. Sahlmann/B. Holl	Hands-on session <u>Radial Velocity</u> MCMC - do it yourself R. Diaz/N. Unger(Uni. Genève)	Hands-on session <u>Transit</u> GP - do it yourself V. Maguire-Rajpaul	Advanced topics <u>Machine Learning</u> A. Leleu (Uni. Genève) Period Detections N.Hara (Uni. Genève)
30 min break	Coffee	Coffee	Coffee	Coffee	Coffee
Session - 4 16h00-17h30	Hands-on session Statistics Linear regression, likelihood Time series, Correlated Noise S. Zucker/A. Binnenfeld (Univ. Tel Aviv, Israel)	Hands-on session Astrometry Searching for planets in GAIA astrometric time series J. Sahlmann/B. Holl	Hands-on session Radial Velocity MCMC - do it yourself R. Diaz/N. Unger	Hands-on session Transit GP - do it yourself V. Maguire-Rajpaul	End of School
		School Dinner in Geneva		Social Run & Drinks 18h00-20h30	

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Exoplanets and astrostatistical analysis techniques

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September 16, 2022 (v1) Software Open Access View

Jupyter notebooks from Gaussian process and transit fitting hands-on sessions

Vinesh Maguire Rajpaul;

Jupyter notebooks, and auxiliary data, from two "hands-on" sessions at the Exoplanets Astrostatistics Summer School (12-16 Sept. 2022 in Geneva). Notebooks used in these sessions had several blocks of Python code missing, to be filled out by session attendees;

Uploaded on September 16, 2022

September 16, 2022 (v1) Presentation Open Access View

Gaussian processes - a gentle introduction

Vinesh Maguire Rajpaul;

Slides presented at the Exoplanets Astrostatistics Summer School (12-16 Sept. 2022 in Geneva). The presentation introduces Gaussian processes, and outlines several exoplanet-focused applications.

Uploaded on September 16, 2022

September 15, 2022 (v1) Software Open Access View

Jupyter notebooks and solutions for astrometry hands-on session

Sahlmann, Johannes; Holl, Berry;

Notebooks, auxiliary code, and input data for the hands-on session on astrometric orbit fitting of exoplanet host stars.

Uploaded on September 15, 2022

New upload

Exoplanets and astrostatistical analysis techniques

Presentations shows as part of the Summer School "Exoplanets and astrostatistical analysis techniques", Sep 12 – 16, 2022, Geneva Observatory: <https://indico.cern.ch/event/1136851/>

[Read more](#)

Curated by:
Johannes-Sahlmann

Curation policy:
Not specified

Created:
September 12, 2022

Harvesting API:
[OAI-PMH Interface](#)

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Slides of the lecturers available through Zenodo.

What worked well?

- The COST meetings really helped to revive the research field after the Covid lockdown.
 - The meetings right after Covid were tremendously appreciated!
- COST greatly helped to fund the more expensive types of meetings, like a PhD school, where the lecturers need to be funded.
 - The PhD students were very enthusiastic about the school!
- The COST meetings helped with
 - boosting Gaia's potential and scientific return
 - disseminating all the information that is present in the Gaia documentation

What could improve?

- The subdivision of the WG in sub-WG, each with its own coordinator did not have that much added value.
- The spending of COST money is subjected to many rules from Brussels
 - has caused more than once some confusion with the LOC
 - The total amount of funding was often not the problem, it's the way you can spend it. In some cases, the LOC felt it was not possible to organize the meeting with COST funding alone, and had to look for other funding channels.
 - Always got a lot of help from our Action's financial manager.
A huge *thank you* to Carme!

Thanks!