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CSH Seminars

Schedule for CSH Seminars: Fall 2019

Note: CSH seminars take place on Thursdays, 12.15-13.00, Meeting room -108, G6 building, Gesellschaftsstrasse 6, 3012, Bern

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This schedule is constantly updated. Check back regularly.
Address any questions to Brice-Olivier Demory.

19/09/19: Dr. Brett Morris (CSH/Bern) - Office 203

Title: The Effects of Stellar Magnetic Activity and Variability on Observations of Exoplanets

26/09/19: Dr. Luca Maltagliati (nature astronomy) - Office TBD

Title: How to publish in Nature (Astronomy)

Abstract: One of the main obstacles authors can meet when they want to publish their research in a Nature journal is the feeling that the criteria for paper selection are quite 'esoteric' and unclear. An editor of Nature Astronomy will talk about what Nature editors really look for when they assess a paper for consideration, answer any questions about the journal, and give tips on how to write a paper (particularly for Nature, but valid in general).

Host: Prof. Kevin Heng

3/10/19: Dr. Anna Grau-Galofre (Arizona State University) - Office G6 207

Title: Valley network formation under ancient Martian ice sheets

Host: Dr. Patricio Becerra

10/10/19: Dr. Clémence Fontanive (CSH/Bern)

Title: Brown Dwarf Binaries: from Statistics to Formation and Evolution

17/10/19: Dr. Manuel Perger (Barcelona) - Office 105

Title: CARMENES and stellar activity treatment

Host: Dr. Daniel Angerhausen

24/10/19: Dr. Katharine Johnston (Leeds) - Office 105

Title: Properties of accretion discs around massive stars with ALMA

Host: Dr. Maria Drozdovskaya

31/10/19: Dr. Beibei Liu (Lund) - Office 105**Title:** From Pebbles to Planets

Abstract: In protoplanetary disks, dust grains first coagulate by perfect sticking but they cannot further grow beyond centimeter-meter size. Streaming instability is a key mechanism that clusters pebbles (~mm-cm size particles) into planetesimals with the help of self-gravity. After planetesimals form, they can grow into protoplanets by feeding from other planetesimals as well as by accreting inwardly drifting pebbles from the outer disk. The transition from planetesimal-dominated accretion to pebble-dominated accretion for typical disk conditions is around $1e-2$ Earth mass. The subsequent planet growth could be driven by pebble accretion and their core mass is thus regulated by the pebble isolation mass. I will present a pebble-driven core accretion model to study the formation of planets around stars in the stellar mass range of 0.08 solar mass to 1 solar mass. The forming planet population is compared with the observed exoplanets in terms of mass, metallicity and water content. The results succeed in quantitatively reproducing several observed properties of exoplanets and correlations with their stellar hosts.

Hosts: Dr. Yuhito Shibaie & Remo Burn

7/11/19: Dr. Niels Ligterink (CSH/Bern)**Title:** ORIGIN: A space instrument to explore the organic composition of Europa in-situ

Abstract: The search for life and its tracers on planets other than Earth has been an unsuccessful one up to now. In part this has to do with instrumentation and measurement methodologies, which currently are not up to this task.

In this talk I will present ORIGIN, a laser desorption mass spectrometer, developed at the University of Bern, for the investigation of organic material. I will discuss the key features of this system and present the first results obtained with the instrument. The results of this study will be put in the context of a Europa Lander mission.

14/11/19: Dr. Kamber Schwarz (Arizona) - Office TBD**Title:** The Evolution of Volatile Carbon During Planet Formation**Host:** Prof. Susanne Wampfler

Abstract: Today, with the wealth of data provided by the Atacama Large Millimeter/submillimeter Array (ALMA), we are beginning to characterize the chemistry associated with planet formation in protoplanetary disks. Gaps in the dust disk, an indication of grain growth, now appear to be ubiquitous. Kinematic evidence even points to presence of fully formed giant planets within these gas rich disks. Additionally, many disks have low CO-to-dust ratios, suggestive of substantial chemical evolution. In this talk I will discuss recent ALMA observations which reveal low abundances of gas phase carbon in protoplanetary disks. This volatile sequestration, i.e., the removal of molecules such as CO from the gas, can occur via chemical reprocessing into less volatile species or trapping as ice in large planetesimals. Using disk chemical modeling, I will demonstrate that under most physical conditions both chemical and physical processes likely play a role in removing carbon from the gas on short timescales. Within this context I will discuss preliminary results constraining ionization in the envelopes of two Class I protostars which have previously been shown to have low CO abundances. Understanding the timescales of combined physical and chemical processes is crucial for linking the composition of disks and planets.

21/11/19: Ms Sandra Potin (Grenoble) - Office TBD

Title: TBD

Host: Dr. Antoine Pommerol

28/11/19: Dr. Christian Renggli (Muenster) - Office TBD

Title: Gas-solid reactions in planetary environments: The role of Sulfur

Host: Dr. Dan Bower

5/12/19: Prof. Ignas Snellen (Leiden) - Office TBD

Title: CSH Distinguished Lecture II

Host: Prof. Kevin Heng

12/12/19: Dr Michele Bannister (Belfast) - Office TBD

Title: Insights on planetary systems from interstellar objects

Abstract: The small bodies of planetary systems record how their systems formed and evolved. Observations of the first interstellar object 1I/Oumuamua show this visiting planetesimal has many curious properties, with some kinship to the tiny worlds in our own system. In contrast, 2I/Borisov is a comet very like the carbon-depleted population in the Solar System. Their 10^{26} cousins wandering the Galaxy are part of an overarching cycle of planetesimal formation and scattering over billions of years. I will outline how this vast population of interstellar objects opens many possibilities for linking together seemingly disparate areas of astronomy and planetary science, from the formation of planets to galactic dynamics.

Host: Dr. Holly Capelo

19/12/19: Dr Nathan Mayne (Exeter) - Office TBD

Title: TBD

Host: Prof. Brice-Olivier Demory

13/02/20: Dr. Brett McGuire (NRAO) - Office TBD

Title: TBD

Host: Dr. Maria Drozdovskaya

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