Program

Monday, March 19, 2018

09:00 – 14:00	*Registration*	
12:30	*LUNCH*	

The first steps towards chemical complexity: from pre-stellar cores to protoplanetary disks. I.

14:00 – 14:15	Paola Caselli Dieter Braun Cecilia Ceccarelli	**Welcome and opening**
14:15 – 14:30	Stefan Jorda	**The Wilhelm and Else Heraeus Foundation**
14:30– 15:15	Ewine van Dishoeck	**Chemical processes and evolution from clouds to disks**
15:15 – 15:45	Arnaud Belloche	**Molecular complexity in star forming regions**
15:45 – 16:15	Eric Herbst	**Forming Complex Molecules in Early Stages of Star Formation**
16:15 – 17:00	*COFFEE BREAK* and posters	
17:00 – 17:15	Maite Beltrán	**The chemical and physical structure of the hot molecular core G31.41+0.31**
17:15 – 17:30	Francesco Fontani	**Growth of carbon chains in the Solar-type protocluster OMC-2 FIR4**
17:30 – 17:45	Brett McGuire	**From One to Two Dimensional Interstellar Carbon: A Synthesis of Laboratory, Observations, and Theory**
17:45 – 18:30	General discussion, led by Ewine van Dishoeck, Arnaud Belloche and Eric Herbst	
19:00 – 21:00	*DINNER* and group discussion	

Program

Tuesday, March 20, 2018

08:00 – 09:00 *BREAKFAST*

The first steps toward chemical complexity : from pre-stellar cores to protoplanetary disks. II.

09:00 – 09:45	Nadia Balucani	**Gas phase chemistry and molecular complexity: how far do they go?**
09:45 – 10:15	Izaskun Jiménez-Serra	**Chemical Complexity in Pre-stellar Cores**
10:15 – 10:45	François Dulieu	**Formation of interstellar complex mole cules on dust grains**
10:45 – 11:30	*COFFEE BREAK* and posters	
11:30 – 11:45	Claudio Codella	**Protostellar shocks as factories of interstellar complex organic molecules**
11:45 – 12:00	David Quénard	**Chemical modelling of formamide and methyl isocyanate in star-forming regions**
12:00 – 12:15	Viviana Guzmán	**Complex molecules in PDRs and protoplanetary disks**
12:15 – 12:30	Máté Ádámkovics	**Hot molecular emission in circumstellar disk gas as a diagnostic of radiative and mechanical heating**
12:30 – 13:00	General discussion, led by Nadia Balucani, Izaskun Jiménez-Serra and François Dulieu	

13:00 *LUNCH and group discussion*

Program

Tuesday, March 20, 2018

The Solar System. I.

14:30 – 15:15	Conel Alexander	**Organics in meteorites: Interstellar, solar and/or parent body?**
15:15 – 15:45	Frances Westall	**Prebiotic molecules in the Solar System, scenarios for the origin of life and implications for the emergence of life**
15:45 – 16:15	Olivier Mousis	**Formation of ices in the protosolar nebula and implications for the composition of outer planets**
16:15 – 17:00	*COFFEE BREAK* and posters	
17:00 – 17:15	Grégoire Danger	**Interstellar ices as a source of complex organic molecules of interplanetary solar system objects**
17:15 – 17:30	Maria Drozdovskaya	**Pre- and protostellar roots of cometary volatiles**
17:30 – 17:45	Jan Hendrik Bredehöft	**A reaction network for Chury's chemistry**
17:45 – 18:30	General discussion, led by Conel Alexander, Frances Westall	
19:00 – 21:00	*DINNER* and group discussion	

Program

Wednesday, March 21, 2018

08:00 – 09:00	*BREAKFAST*	

The Solar System. II.

09:00 – 09:45	Alessandro Morbidelli	**Solar System formation and evolution: dynamical models and cosmochemical implications**
09:45 – 10:15	Stefanie Milam	**Remote studies of organics in cometary comae**
10:15 – 10:45	Steve Charnley	**Observations of Organic Chemistry on Titan**
10:45 – 11:30	*COFFEE BREAK*	
11:30 – 11:45	Sergio Ioppolo	**Solid state chemistry driven by 1 keV electrons**
11:45 – 12:00	Yo-Ling Chuang	**(Sub)millimeter Molecular Observations of Solar System Icy Worlds**
12:00 – 12:15	Víctor M. Rivilla	**Phosphorus: the missing prebiotic element… found in star-forming regions and comets**
12:15 – 13:00	General discussion, led by Alessandro Morbidelli, Stefanie Milam and Steve Charnley	
13:00	*LUNCH* and group discussion	

Program

Wednesday, March 21, 2018

Exoplanets and habitability

14:30 – 15:15	Nikku Madhusudhan	**Chemical Characterization of Extrasolar Planets**
15:15 – 15:45	Christiane Helling	**Dynamic and kinetic processes shaping exoplanet atmosphere chemistry**
15:45 – 16:00	John Ilee	**The chemical composition of protoplanets in a fragmenting disc**
16:15 – 17:00	*COFFEE BREAK* and posters	
17:00 – 18:00	Poster presentation	
18:00 – 18:30	General discussion, led by Nikku Madhusudhan and Christiane Helling	
	HERAEUS DINNER	
19:00	(cold & warm buffet with complimentary drinks) and group discussion	

Program

Thursday, March 22, 2018

08:00 – 09:00 *BREAKFAST*

Primitive Earth and conditions to host life

09:00 – 09:45	Zita Martins	**Influence of mineralogy on the preservation of biosignatures under simulated planetary conditions**
09:45 – 10:15	Nathalie Carrasco	**Organic chemistry in the atmosphere of the early earth**
10:15 – 10:30	Luis Le Sergeant d'Hendecourt	**From Astrochemistry to Astrobiology: the role of extraterrestrial ices in the build-up of a prebiotic chemistry on telluric planets**
10:30 – 11:30	*COFFEE BREAK*	
11:30 – 11:45	Christof Mast	**Thermal gradients – a natural choice to support the origins of life**
11:45 – 12:00	Heinfried Schöler	**Fluid inclusions in Archaean rocks as window to the early evolution of organic molecules on Earth**
12:00 – 12:15	Bertrand Lefloch	**A Search for Phosphorus-bearing molecules in Solar-type Star Forming Regions**
12:15 – 13:00	General discussion, led by Zita Martins and Nathalie Carrasco	
13:00	*LUNCH* and group discussion	

Program

Thursday, March 22, 2018

The assembly of prebiotic molecules

14:30 – 15:15	Matthew Powner	**Prebiotic Chemistry: Synthesis and Seletion**
15:15 – 15:45	Lorenzo Botta	**Prebiotic origin of nucleosides in a formamide context**
15:45 – 16:15	Rebecca Turk-MacLeod	**Exploring the emergence of complexity with microfluidic droplets**
16:15 – 17:00	*COFFEE BREAK* and posters	
17:00 – 17:15	Fanny Vazart	**The ethanol tree: possible gas-phase formation routes of glycolaldehyde, acetic acid and formic acid in ISM**
17:15 – 17:30	Anthony Remijan	**Recent Advances in Our Understanding of the Prebiotic Molecular Complexity in Astronomical Environments**
17:30 – 18:30	General discussion, led by Matthew Powner, Rebecca Turk-MacLeod and Lorenzo Botta	
19:00	*DINNER* and group discussion and poster prize	

Program

Friday, March 23, 2018

08:00 – 09:00	*BREAKFAST*	

Steps toward evolution

09:00 – 09:45	Phil Holliger	**RNA-catalyzed RNA replication**
09:45 – 10:15	Ulrich Gerland	**Transport reaction cycles as a prebiotic driving force**
10:15 – 10:45	Hannes Mutschler	**Prebiotic and Synthetic RNA worlds**
10:45 – 11:30	*COFFEE BREAK*	
11:30 – 11:45	Marco Saitta	**From quantum computational physics to the origins of life**
11:45 – 12:00	Eva Mateo-Marti	**Amino-acids and small peptides on mineral surfaces: molecular interaction process**
12:00 – 12:15	Victor Sojo	**A microfluidic reactor for autonomous, microfluidic synthesis of RNA**
12:15 – 12:55	General discussion, led by Phil Holliger, Ulrich Gerland and Hannes Mutschler	
12:55	Paola Caselli Dieter Braun Cecilia Ceccarelli Pascale Ehrenfreund	Closing remarks
13:00	*LUNCH* and group discussion	

End of the seminar and FAREWELL COFFEE / Departure

Please note that there will be no dinner at the Physikzentrum on Friday evening for participants leaving the next morning.