Program of the conference “Chemical Processes in Solar-type Star-Forming Regions”

Hotel Mercure Compans Caffarelli
Toulouse (France), June 5-9 2023

(In **bold**, the invited speakers)

Monday, June 5, 2023

TIME	EVENT
11:00 - 13:30	Registration
13:30 - 13:50	Opening talk
Astrophysical Ices: chairman François Dulieu	
13:50 - 14:30	*The Chemical Composition of Comets* - **Steve Charnley**
14:30 - 14:50	*Astrochemical models of interstellar ices: history matters* - Valentine Wakelam
14:50 - 15:10	*A machine-learning model to predict the composition and temperature of infrared ice spectra* - Andrés Megías
15:10 - 15:30	*Theoretical Modeling of Olivine Clusters and of Their Interaction with Sulphur Bearing Species* - Jessica Perrero
15:30 - 16:30	**Coffee break and Poster Session**
16:30 - 17:10	*The Role of Molecular Simulation in Astrochemistry* - **Piero Ugliengo**
17:10 - 17:30	*A systematic comparison between molecular abundances in comets and protoplanetary disks* - Manuela Lippi
17:30 - 17:50	*Water Reactivity On Schreibersite: From Phosphites To Phosphates* - Marta Corno
17:50 - 18:00	*Presentation of Virtual reality ACO project* - Claudio Codella

Tuesday, June 6, 2023

TIME	EVENT
Astrophysical Ices: chairwoman Nadia Balucani	
09:00 - 09:40	*Interstellar Ices in Regions of Star Formation* - **Alexander Tielens**
09:40 - 10:00	*Comprehensive Quantum Chemistry Approach for the Evaluation of Binding Energies on Interstellar Ices. From the Water Dimer to Far-Reaching Surfaces* - Giulia Bovolenta
10:00 - 10:20	*Computed Binding Energies and Frequencies Distribution of Relevant S-Bearing Species at Interstellar Icy Grains* - Vittorio Bariosco
10:20 - 11:10	Coffee break and Poster Session
11:00 - 11:20	*Cosmic-ray-driven processes in astrophysical ices: Experimental insights* - Alexei Ivlev
11:20 - 11:40	*Formation of CO_2 on Interstellar H_2O Ice: A Computational Study* - Harjasnoor Kakkar
11:40 - 12:00	*Hydrogenation of species on water icy mantles: insights on energy dissipation from ab-initio molecular dynamics* - Stefano Pantaleone
12:10 - 14:00	**Lunch**
Astrophysical Ices: chairwoman Cecilia Ceccarelli	
14:00 - 14:20	*Revealing the chemical and dynamical history of Solar-type protostars: the crucial role of cm wavelengths* - Marta De Simone
14:20 - 14:40	*Dissipation of the Nascent Reaction Energy of Formamide Formation Route on Interstellar Water Ice Surfaces* - Berta Martínez Bachs
14:40 - 15:00	*The Role Of Low-Energy (< 20 eV) Electrons In Astrochemistry* - Qin Tong Wu
15:00 - 15:20	*Interstellar Ices Formation And Interaction With Molecules Of Astrochemical Interest: An In Situ Infrared Study* - Guillermo Escolano Casado
15:20 - 16:20	**Coffee break and Poster Session**
16:20 - 17:00	*Diffusion and sublimation of ices on comets and (icy)moons* - **Stéphanie Cazaux**
17:00 - 17:20	*Laboratory constraints on thermal desorption of astrophysical ice analogues* - Franciele Kruczkiewicz
17:20 - 17:40	*Sticking Coefficients of Astrochemically-Relevant Ices on Realistic Grains Analogues are Lower than Expected* - Caroline Stadler
17:40 - 18:00	*Unlocking the Interaction of CN Radical with Interstellar Ices: An Atomistic View of Polar and Apolar Environments* - Joan Enrique Romero

Wednesday, June 7, 2023

TIME	EVENT
Molecular complexity: chairman ?	
09:00 - 09:40	*Molecular complexity in Solar-System analogs* - **Eleonora Bianchi**
09:40 - 10:00	*A Challenging Quest to Unveil the Beyond-the-Second-Period Chemistry in Space* - Matteo Michielan
10:00 - 10:20	*Astrochemical Modeling of Protostellar Core Envelopes* - Prasanta Gorai
10:20 - 11:10	**Coffee break and Poster Session**
11:10 - 11:30	*Comparing the Reactivity of HCN and $HCONH_2$ on Amorphous and Crystalline Mg_2SiO_4 Surfaces: Insights into Interstellar Dust Grain Chemistry* - Rosangela Santalucia
11:30 - 11:50	*Chemical evolution during the formation of a FHSC: the B1b-N case* - David Navarro-Almaida
11:50 - 12:10	*Chemical environment of emerging hot cores: the early warm-up phase chemistry* - Laure Bouscasse
12:10 - 14:00	**Lunch**
Molecular complexity: Claudio Codella	
14:00 - 15:40	*Solid Interstellar Radical Chemistry (SIRC)* - **Fabrice Duvernay**
14:40 - 15:00	*Computational Approach for the High-Throughput Screening of Molecular Interactions for Prebiotic Astrocatalysis* - Eric Mates-Torres
15:00 - 15:20	*Constraining the diffuse envelope surrounding L1544* - Judit Ferrer Asensio
15:20 - 15:40	*Grain growth in star formation* - Pierre Marchand
15:40 - 16:40	**Coffee break**
16:40 - 17:00	*Ion-neutral reactions for formation and destruction of interstellar Complex Organic Molecules* - Daniela Ascenzi
17:00 - 17:20	*Gas-Phase Formation Of Interstellar Methyl Cyanide: Review And New Theoretical Calculations* - Lisa Giani
17:20 - 17:40	*Formation and elongation of polyglycine via unimolecular reaction in the gas phase* - Paul Bertier
17:40 - 18:00	*OMC-2 FIR4: a protostellar cluster full of surprises* - Layal Chahine
20:00 - 23:00	**Social Dinner at "Les Pieds sous la table"**

Thursday, June 8, 2023

TIME	EVENT
Molecular fractionation: chairman Alexei Ivlev	
09:00 - 09:40	*Molecular fractionation from clouds to planetary systems* - **Eva Wirström**
09:40 - 10:00	*First ALMA maps of cosmic-rays ionization rate in high-mass star-forming region* - Giovanni Sabatini
10:00 - 10:20	*A high HDO/H2O ratio in the Class I protostar L1551 IRS5* - Audrey Andreu
10:20 - 11:20	**Coffee break and Poster Session**
11:20 - 11:40	*Formaldehyde In The Dynamic Protobinary System [BHB2007] 11: Small Scale Deuteration And Large Scale Kinematics* - Lucy Evans
11:40 - 12:00	*A study of the ^{13}C and ^{15}N fractionation in low-mass starless cores* - Sigurd Jensen
12:00 - 12:20	*Formaldehyde deuteration in the young disk of IRS 63: the astrochemical link to the origin of the Solar System* - Linda Podio
12:20 - 14:00	**Lunch**
14:00 - 14:40	*Chemical evolution from molecular clouds to star-forming regions, and beyond* - **Yashiro Oba**
Molecular complexity: chairman Patrice Theulé	
14:40 - 15:00	*Combined hydrodynamic and gas-grain chemical modeling of star- forming cores* - Melisse Bonfand
15:00 - 15:20	*Heterogeneous Astrocatalysis. Mechanistic Studies For The Catalytic Formation Of iCOMs Based On Fischer-Tropsch Processes* - Gerard Pareras
15:20 - 15:40	*Hydrogenation products of CO, H_2CO and CH_3CHO, alongside NO in the interstellar medium* - Julie Vitorino
15:40 - 16:40	**Coffee break and Poster Session**
16:40 - 17:00	*Origin of COMs towards hot cores selected from ALMA-IMF* - Timea Csengeri
17:00 - 17:20	*Unravelling The Path to Molecular Complexity With Quantum Chemistry* - Isabelle Fourré
17:20 - 17:40	*Unveiling chemical structures of star-forming regions with machine learning techniques* - Katharina Giers
17:40 - 18:00	*A Spatially Resolved map of Cosmic Ray Ionization Rate and Electron Fraction* - Jaime Pineda

Friday, June 9, 2023

TIME	EVENT
Molecular complexity: chairwoman Christine Joblin	
09:00 - 09:20	*The chemical composition of solar-type protostars with the ALMA large spectral surveys PILS and COMPASS* - Audrey Coutens
09:20 - 09:40	*Dimerization of HCN on Interstellar Silicates Grain Cores: A Quantum Mechanical Study* - Niccolò Bancone
09:40 - 10:00	*Collision Induced Dissociation of Water Pyrene Molecular Clusters* - Arya Nair
10:00 - 10:20	*Where Planetary Systems Are Born Matters: The Chemistry Of Clustered Versus Isolated Environments And Cradle Of The Sun* - Mathilde Bouvier
10:20 - 10:40	*Astrochemically Relevant H-Atom-Abstraction and H-Atom-Addition Reactions Connecting Fulminic Acid (HCNO) and Formaldoxime (H_2CNOH)* - Barbara Keresztes
10:40 - 11:20	**Coffee break**
11:20 - 11:40	*Protostellar shocks as factories of organic molecules: the case of L1157* - Ana Lopez Sepulcre
11:40 - 12:00	*Super-Oxygenation of Naphthalene: The break-Down Reaction* - Dario Campisi
12:00 - 12:20	*The effect of metallicity on the abundances of molecules in protoplanetary disks* - Rodrigo Guadarrama
12:20 - 14:00	**Lunch**