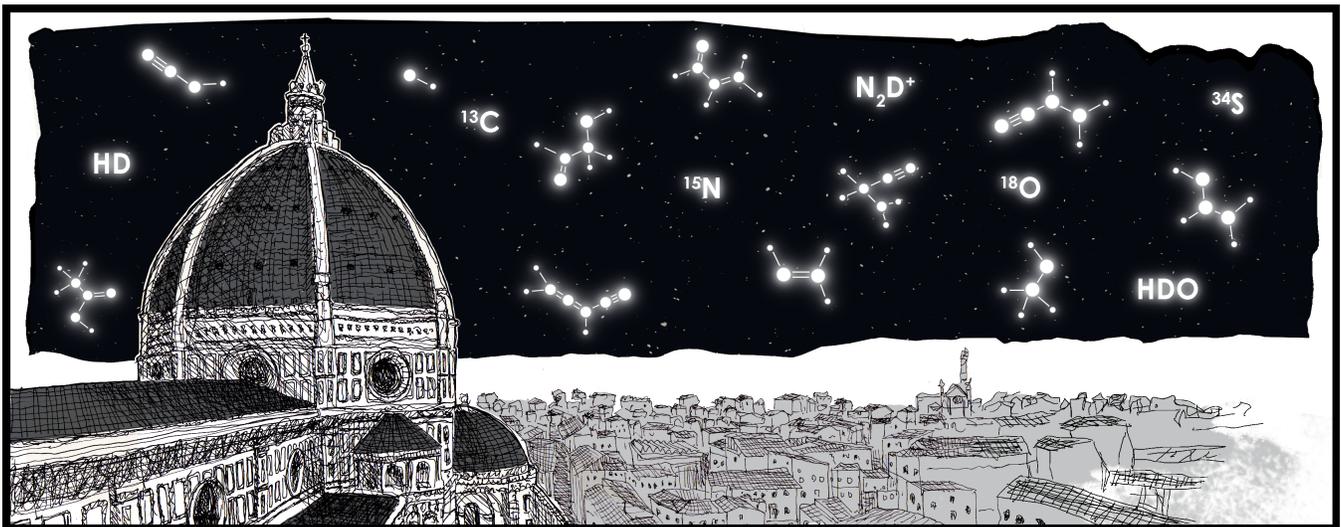


# Fractionation of isotopes in space: from the solar system to galaxies

10-13 October 2016 Arcetri, Florence, Italy

## Programme



Credit: Jesús D. García Guijarro

## Monday 10 October 2016

13:00 - 14:00	Registration	
14:00 - 14:10	Welcome	
<b>Session I: ALMA and laboratory</b>		
14:10 - 14:30	Leonardo Testi (I)	Review on ALMA Band 2+3 capabilities
14:30 - 14:50	Maite Beltrán (I)	ALMA 2+3 Science Cases
14:50 - 15:20	Sandra Brünken (I)	From gas-phase isotope exchange reactions to isotopomer spectroscopy (and back)
15:20 - 15:50	Coffee Break	
15:50 - 16:10	Thanja Lamberts (C)	Importance of tunneling in H-abstraction reactions by OH radicals: The case of CH <sub>4</sub> + OH
16:10 - 16:30	Riccardo Giovanni Urso (C)	A laboratory study of the OD stretching mode band in H <sub>2</sub> O:HDO ice mixtures
16:30 - 16:50	Victor de Souza Magalhães (C)	A study of HF anomalies and carbon fractionation in HCN
16:50 - 17:10	Antonio Jiménez Escobar (C)	First results of the UHV system 'LIFE' (Light Irradiation Facility for Exochemistry)
17:10 - 17:30	John Robert Brucato (C)	Isotopic fractionations in the Solar System

## Tuesday 11 October 2016

<b>Session II: Prestellar cores and IRDCs</b>		
<b>09:00 - 09:30</b>	Eva Wirström (I)	Fractionation in dark pre-stellar clouds
<b>09:30 - 10:00</b>	Charlotte Vastel (I)	Deuteration and fractionation in prestellar cores and IRDCs: the observational point of view
<b>10:00 - 10:20</b>	Paola Caselli (C)	D and $^{15}\text{N}$ fractionation in pre-stellar cores
<b>10:20 - 10:50</b>	Coffee Break	
<b>10:50 - 11:10</b>	Thusara Pillai (C)	Primordial Deuterium Astration in the Galactic Center
<b>11:10 - 11:30</b>	Nami Sakai (C)	Tracing the production pathways of molecules by $^{12}\text{C}/^{13}\text{C}$ ratio
<b>11:30 - 11:50</b>	Anna Punanova (C)	Deuterium fractionation in the Taurus molecular cloud
<b>11:50 - 12:10</b>	Malcolm Walmsley (C)	What happens at high density in cores?
<b>12:10 - 12:30</b>	Jonathan Tan (C)	Deuteration Studies of Massive Star Formation
<b>12:30 - 14:00</b>	Lunch break	
<b>14:00 - 14:20</b>	Volker Ossenkopf-Okada (C)	$^{13}\text{C}$ fractionation in photon-dominated regions
<b>Session III-a: Protostellar YSOs</b>		
<b>14:20 - 14:50</b>	Cecilia Ceccarelli (I)	Observational review on fractionation
<b>14:50 - 15:20</b>	Vianney Taquet (I)	Theoretical review on fractionation in protostellar YSOs

<b>15:20 - 15:50</b>	Coffee Break	
<b>15:50 - 16:10</b>	Claudia Comito (C)	A three-dimensional model of the distribution and deuteration of water in SgrB2(M)
<b>16:10 - 16:30</b>	Alexandre Faure (C)	D/H equilibrium fractionation in ices
<b>16:30 - 16:50</b>	Claudio Codella (C)	Hot and dense water in the inner 25 AU of SVS13-A
<b>16:50 - 17:10</b>	Gemma Busquet (C)	The L1157-B1 astrochemical laboratory: testing the origin of DCN
<b>17:10 - 17:30</b>	Susanne Wampfler (C)	Spatially resolved measurements of the $^{14}\text{N}/^{15}\text{N}$ ratio around protostars
<b>17:30 - 17:50</b>	Yoshida Kento (C)	Molecular isotopic ratios in the low-mass protostar L1527

## Wednesday 12 October 2016

<b>Session III-b:</b>		<b>Protostellar YSOs</b>
09:00 - 09:20	Sandra Treviño-Morales (C)	Deuteration around the ultracompact HII region Mon R2
09:20 - 9:40	Audrey Coutens (C)	Isotopic fractionation of complex organic molecules: Results from the ALMA-PILS survey
09:40 - 10:00	Eleonora Bianchi (C)	How H <sub>2</sub> CO and CH <sub>3</sub> OH deuteration changes during the formation of a Sun-like star? The SVS13-A case
10:00 - 10:20	Linda Podio (C)	The L1157-B1 protostellar shock: Si fractionation and chemistry
10:20 - 10:50	Coffee Break	
<b>Session IV:</b>		<b>Circumstellar disks</b>
10:50 - 11:20	Ilseadore Cleeves (I)	Physical and Chemical Drivers of Deuteration in Protoplanetary Disks
11:20 - 11:50	Chunhua Qi (I)	Observations of isotopic fractionation in circumstellar disks
11:50 - 12:15	Olja Panić (I)	CO isotopologues in protoplanetary disks
12:15 - 13:45	Lunch break	
<b>Session V:</b>		<b>Solar system</b>
13:45 - 14:15	Steve Charnley (I)	Theoretical review on fractionation
14:15 - 14:45	Nicolas Biver(I)	Measurements of isotopic ratios in solar system bodies

14:45 -15:05	Pierre Hily-Blant (C)	The origin of nitrogen in planetary systems
15:05 - 15:35	Coffee Break	
15:35 - 16:05	Ursina Calmonte (I)	New results on deuteration and fractionation from Rosetta/ROSINA
16:05 - 16:25	Jean-Cristophe Loison (C)	The photochemical fractionation of oxygen isotopes in Titan's atmosphere
16:25 - 16:45	Sara Faggi (C)	First spectrally complete survey of cometary water emission at near IR wavelengths (0.9-2.5 $\mu\text{m}$ ): C/2
16:45 - 17:05	Marina Martínez-Jiménez (C)	Rare-Earth Element Fractionation Evidence in the Solar Nebula From the Study of Primitive Chondrites
17:05 - 18:00	<b>Discussion session</b>	
18:30 -20:00	<b>Visit to Galileo's Villa "Il Gioiello" and Aperitivo</b>	
20:00	<b>Social Dinner at Trattoria Omero</b>	

## Thursday 13 October 2016

<b>Session VI: Extragalactic sources</b>		
<b>09:00 - 09:30</b>	Serena Viti (I)	Deuteration and fractionation in extragalactic sources: a theoretical view
<b>09:30 - 10:00</b>	Christian Henkel (I)	Nucleosynthesis and Molecular Isotope Ratios in Extragalactic Systems
<b>10:00 - 10:20</b>	Leslie Hunt (C)	CO fractionation in a low metallicity starburst
<b>10:20 - 10:50</b>	Coffee Break	
<b>10:50 - 11:10</b>	Sarolta Zahorecz (C)	Fractionation in GRB host galaxies
<b>11:10 - 11:30</b>	Sabine König (C)	Deep ALMA imaging of the merger NGC 1614 - Is CO tracing a massive inflow of non-star-forming gas?
<b>11:30 - 11:50</b>	Rebeca Aladro	Chemistry and isotopologues in nearby active galaxies
<b>11:50 - 12:15</b>	Francesco Fontani	<b>Conclusion remarks</b>