Nuclear Spin Effects in Astrochemistry // Program

May 2nd-4th 2017, IPAG, Grenoble

Talks + Questions = 30 min // Forsee at least 5 min for questions

Tuesday, 2nd

Tuesday, Afternoon session – *OPR of water*

13:50–14:00	A. Faure	*Welcome & Introduction*
14:00–14:30	H. Schmiedt	*Nuclear spin states in molecules: unified rotational and permutational symmetry and selection rules in reactive collisions*
14:30–15:00	T. Hama	*Spin dynamics of water ice and the OPR of gaseous water desorbed from ice*
15:00–15:20		*Coffee break*
15:20–15:50	P. Ayotte	*Preparation, characterization and storage of water vapours highly enriched in its ortho-H_2O nuclear spin isomer.*
15:50–16:20	R. Georges	*Nuclear spin symmetry conservation in H_2O investigated by direct absorption FTIR spectroscopy of water vapor cooled down in supersonic expansion*
16:20–16:50	D. Lis	*The OPR in Interstellar Water*
16:50–17:20	B. Bonev	*Spin ratios in comets: complexity of measurements, post-2014 updates, and prospects*
17:20–18:00		*Discussion; Chair: Eva Wirström*

Tuesday, Evening – Social event

18:30	*Cocktail at IPAG*

Wednesday, 3rd

Wednesday, Morning session – *OPR of H_2*

8:30–9:00	D. Gerlich	*Nuclear spin restrictions in gas phase reactions: more experiments are needed!*
9:00–9:30	P. Hily-Blant	*Steady-state nuclear spin chemistry in dark clouds*
9:30–10:00		*Coffee break*
10:00–10:30	T. Gonzales-Lezana	*Ortho-para H_2 conversion by proton exchange in astrophysical media from 10 K to 3000 K*
10:30–11:00	K. Fukutani	*Rotational state and ortho-para conversion of H_2 on solid surfaces*
11:00–11:30	E. Bron	*The OPR of H_2: the role of dust grains*
11:30–12:00		*Discussion; Chair: John Black*

Lunch: Buffet

Wednesday, Afternoon session – OPR of H_3^+ and organics

14:00–14:30	O. Roncero	*Ortho/para conversion of H_3^+ in collisions with H_2 and H*
14:30–15:00	K. Crabtree	*The OPR of the trihydrogen cation in diffuse molecular clouds*
15:00–15:20		*Coffee break*
15:20–15:50	X. Michaut	*What do we know about time scales for the nuclear spin conversion in molecular ices and at the solid-gas interface ?*
15:50–16:20	O. Sipilä	*Spin states of H_2D^+ and D_2H^+ as chemical age tracers*
16:20–16:50	G. Villanueva	*Do spin temperatures differ between molecules in comets ? The case for H_2O, CH_4, NH_3, C_2H_6, and CH_3OH*
16:50–17:20		*Discussion; Chair: Darek Lis*

Wednesday, Evening – Social event

17:30	*Leaving IPAG (Tram B, stop: Museum station)*
18:00	*Visit of Grenoble Museum or Bastille*
20:00	*Dinner at "le 5"*

Thursday, 4th

Thursday, Morning session – *OPR of other hydrides*

8:30–9:00	J. Harju	*Spin-state chemistry of deuterated ammonia*
9:00–9:30	H. Kawakita	*Nuclear Spin Isomers in Cometary Molecules: Survey for Ortho-to-Para Ratios of Ammonia in Comets*
9:30–10:00		*Coffee break*
10:00–10:30	S. Charnley	*Spin Effects in Molecular Clouds*
10:30–11:00	R. Le Gal	*OPRs as powerful interstellar diagnostics*
11:00–11:30	D. Neufeld	*OPR measured for triatomic hydrides in the diffuse ISM*
11:30–12:00		*Discussion; Chair: Evelyne Roueff*

Lunch: Buffet