



DAY 1, Monday 24 June 2024

- 07:30 Registration (and breakfast)
 08:45 WELCOME..... I. E. Gordon

SESSION I: Spectroscopy of Earth's atmosphere

Chair: Eli Mlawer

- 08:50 **I-1.** A New Era of Air Quality Monitoring from Space over North America with TEMPO: Commissioning and Early Nominal Operation Results X. Liu
 09:30 **I-2.** The Atmospheric Chemistry Experiment, ACE: overview and recent results P. Bernath
 09:45 **I-3.** Spectroscopic Needs and the Latest Processing Developments for the Atmospheric Chemistry Experiment (ACE)..... C. D. Boone
 10:00 **I-4.** Evaluation of the impacts of recent updates to the HITRAN and MT_CKD water vapor models on infrared radiative transfer fluxes M. L. Gava
 10:15 **I-5.** Forward Modeling Telluric Absorption in High-Resolution Stellar Spectra..... D. M. Krolikowski
 10:30 *Coffee Break* ☕

SESSION II: Lineshapes

Chair: Robert Gamache

- 10:45 **II-1.** Effect of Finite Collision Duration on Line Shapes J. T. Hodges
 11:25 **II-2.** Non-impact effects on the measured intensity of HCl lines ... H. Tran
 11:40 **II-3.** New spectroscopic database of CO₂ in the 1.6 and 2.0 μm spectral regions for remote sensing M. Birk
 11:55 *JQSRT Benedict Award Ceremony* 🎁
 12:00 **II-4.** On the interest of time domain studies of line-mixing and not impact collisional effects J.-M. Hartmann
 12:30 *Lunch Served* 🍴
 13:30 **M-1.** The Molecular Orchestra: Sonifying Emission Spectra 🎵 ... D. Ibbett

SESSION III: Laboratory Spectroscopy for Terrestrial Studies

Chair: Ha Tran

- 13:40 **III-1.** Precision spectroscopy of fundamental and hot-band molecular transitions using optical frequency combs A. Foltynowicz
 14:20 **III-2.** Study of the 1.27 μm band of O₂ by CRDS in the frame of the *MicroCarb* mission D. Mondelain
 14:35 **III-3.** Line intensity measurements and far-wing intensity redistribution in the 0.76 μm O₂ band E. M. Adkins
 14:50 **III-4.** Recent updates on air-broadened O₂ B-band line shapes: pressure- and temperature-dependencies K. Bielska
 15:05 **III-5.** Recent developments in the MT_CKD water vapor continuum E. Mlawer
 15:20 *JQSRT Brault Award Ceremony* 🎁
 15:25 **III-6.** Calculating collision-induced absorption spectra T. Karman
 16:00-18:00 **POSTER SESSION** 📄

DAY 2, Tuesday 25 June 2024

SESSION IV: Spectroscopy for Planetary Studies

Chair: Severine Robert

- 08:45 **IV-1.** *Ab initio* computing of collisional properties for spectral lineshapes and intensities L. Wiesenfeld
 09:25 **IV-2.** Water-Vapor Absorption Database using Dual Comb Spectroscopy from 300-1300 K: Self- and Air-Broadened H₂O, 6600 to 7650 cm⁻¹ S. C. Egbert
 09:40 **IV-3.** New H₂O broadened by CO₂ collisional parameters: from lab to atmospheric retrievals É. Ducreux
 09:55 **IV-4.** Pressure broadening of N₂O:He for characterising exoplanetary atmospheres H. A. Bunn
 10:10 **IV-5.** Utilizing Experimental Based Line Positions for Semi-empirical IR Line Lists X. Huang
 10:25 *Coffee Break* ☕
 10:40 **IV-6.** Advances in laboratory studies of high-temperature and high-pressure spectroscopy for planetary atmospheres C. L. Strand
 11:20 **IV-7.** The Ammonia spectrum in the mid-IR region P. Čermák
 11:35 **IV-8.** High-resolution infrared spectroscopy of molecules of cometary interest P. Hardy
 11:50 **IV-9.** Cold molecular hydrogen P. Wcisło
 12:05 **IV-10.** Fleshing Out Spectral Space L. K. McKemmish
 12:20 *Lunch Served (and Group Photo 📷)* 🍴

SESSION V: Needs for Planetary Research

Chair: Brian Drouin

- 13:20 **V-1.** Atomic and Molecular Databases for the Planetary Community: Access and Challenges..... M. Rengel
- 14:00 **V-2.** The Opacity Challenge and Opportunity for Exoplanetary Science P. Niraula
- 14:15 **V-3.** Data needs for the exoplanetary applications: focus on the Ariel space mission S. Robert
- 14:30 **V-4.** Enabling Cosmic Discoveries: The Vital Role of Laboratory Astrophysics H. Gupta & M. C. McCarthy
- 14:55 *Coffee Break* ☕
- 15:10 **V-5.** Spectroscopy Needs in the Search for Habitable Worlds G. Arney

SESSION VI: Databases and Tools

Chair: Robert Hargreaves

- 15:50 **VI-1.** Empirical Pseudo-Line-Lists derived from laboratory absorption spectra..... G. C. Toon
- 16:30 **VI-2.** From moons to (exo)planets, simulating observations using NASA's Planetary Spectrum Generator..... V. Kofman
- 16:45 **VI-3.** Virtual Planetary Laboratory molecular spectra search engine for the HITRAN molecular spectroscopic database P. Gupta
- 17:00 **VI-4.** Lille Spectroscopic Database for Astrophysically and Atmospherically Relevant Molecules..... R. A. Motiyenko
- 17:15 **VI-5.** A Spectral Line Viewer for Online Databases C. Hill
- 18:30 *Conference Banquet* 🍷

DAY 3, Wednesday 26 June 2024

SESSION VII: New Waves

Chair: AJ Fleisher

- 08:45 **VII-1.** Transition states and mechanisms of chemical reactions studied with broadband rotational spectroscopy K. Prozument
- 09:25 **VII-2.** Predicting the Rotational Dependence of Line Broadening using Machine Learning..... E. R. Guest
- 09:40 **VII-3.** High-Resolution Dual Frequency Comb Spectroscopy from 1 THz to 1 PHz..... K. Vodopyanov
- 09:55 **VII-4.** High-Resolution Dual-Frequency-Comb Laser Spectrometer in the UV Range A. Muraviev
- 10:10 **VII-5.** Looking for position and intensity patterns in the 2OH-stretch band of buffer gas cooled methanol..... A. Libert
- 10:25 *Coffee Break* ☕

SESSION VIII: Laboratory Spectroscopy for Earth and Planetary atmospheres

Chair: Aleksandra Foltynowicz

- 10:40 **VIII-1.** Line intensity measurement of CO and H₂ transitions with 0.1% precision..... Y. Tan
- 11:20 **VIII-2.** Line-shape study of carbon monoxide (7-0) band S. Wojtewicz
- 11:35 **VIII-3.** Multi-laboratory Comparison for Determination of ¹²C¹⁶O (3-0) Band Absolute Line Intensities..... Z. D. Reed
- 11:50 **VIII-4.** Molecular Spectroscopy with 10-MHz Resolution over Mid-IR to THz Range Using Dual Frequency Comb Method D. Konnov
- 12:05 **VIII-5.** Mid-Infrared Doppler-Free Saturation Absorption Spectroscopy of the Q Branch of CH₄ $\nu_3 = 1$ Band using a Rapid-Scanning Continuous-Wave Optical Parametric Oscillator J. Liu
- 12:20 *Lunch Served* 🍴

SESSION VIII continued

Chair: Yan Tan

- 13:30 **VIII-6.** New Laboratory Measurements and Spectroscopic Line Parameters of Infrared Carbon Dioxide Bands..... J. J. Harrison
- 13:45 **VIII-7.** Carbon Dioxide Band Intensity Ratio Measurement by Dual Comb Spectroscopy..... A. J. Fleisher
- 14:00 **VIII-8.** New quantitative measurements and spectroscopic line parameters of ammonia for atmospheric remote sensing D. J. L. Coxon
- 14:15 **VIII-9.** New high resolution microwave and infrared spectra of isoprene I. Kleiner
- 14:30 *Coffee Break* ☕
- 14:45 **VIII-10.** Towards a Global Analysis of the Infrared Spectrum of Formic Acid..... P. Raston
- 15:00 **VIII-11.** Acetylene around 3.8- μ m: new measurements for ¹²C₂H₂, ¹²C¹³CH₂ and ¹²C₂HD isotopologue D. Jacquemart
- 15:15 **VIII-12.** Trends in perfluoroalkane band strengths and climate metrics M. O. Ishtiak
- 15:30 **VIII-13.** Benchmarking tritiated water species V. Hermann
- 15:45 **VIII-14.** Direct Absorption Measurements of Atomic Oxygen at 2.06 THz with a Custom Transmitter / Heterodyne Receiver Pair B. Drouin
- 16:00 *Close* 🚪