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EDUCATION

08/1999 – 08/2004 ***Emory University***, Atlanta, GA, U.S.A., **Ph.D.** in Chemistry (Physical/Theoretical)
Thesis Title: *Full-dimensional quantum studies of the energetics and dynamics of H_3O^+, $H_3O_2^-$ and $H_5O_2^+$.*
Thesis Advisor : Professor Joel M. Bowman
09/1992 – 07/1997 ***Fudan University***, Shanghai, P. R. China, **B.S.** in Applied Chemistry (II)

RESEARCH INTEREST

Computational Molecular Spectroscopy, IR line lists for Astronomical & Atmospheric Molecules, Astrophysics

PROFESSIONAL EXPERIENCE AND EMPLOYMENT HISTORY

06/2009 – Present **SETI** (Search for Extra-Terrestrial Intelligence) Institute, Research Scientist
06/2006 – 05/2009 NASA Postdoctoral Fellow, NASA Ames Research Center (Advisor: Dr. Timothy J. Lee)
09/2004 – 12/2005 Post-doctoral Research Fellow, Emory University (Advisor: Professor Joel M. Bowman)
Member of ACS, AGU, AAS, and AAAS
Reviewer for *J.Chem.Phys., ApJ, MNRAS, J.Phys.Chem., Mol.Phys., JQSRT, JMSpec, PCCP, and Adv.Space Res., etc*.
Co-Guest Editor for a special issue of "*Advances in Physical Chemistry*" entitled *Accurate Potential Energy Surfaces and Beyond: Chemical Reactivity, Binding, Long-Range Interactions, and Spectroscopy*, February, 2012

RECENT PROJECTS (*2006 – 2018*)

Highly accurate IR line lists for HCN / HNC in studies of (exo-)planetary atmospheres, *NASA Grant 16-PDART_2-0080, P.I.*
for SO_2 Isotopologues, *ab initio* IR Lists for H_2O^+, H_2Cl^+, and NH_4^+, *NASA Grant 12-APRA12-0107*, *Co-I*
for Methane and Isotopologues, *NASA Grant 13-PATM13-0012*, *Co-I*
for 13 CO_2 Isotopologues up to 18,000 cm^{-1} and 1500*K*. *Venus Express SI Program, Co-I*
for $^{14}NH_3$, $^{15}NH_3$, and H_3O^+ *NASA Grant 10-APRA10-0096, Co-I.*
for $^{32}S^{16}O_2$ at 296K, up to 6000 cm^{-1}, *NASA Grant 08-APRA08-0050, Co-I*
Accurate rovibrational spectroscopic constants and high quality *ab initio* quartic force field for HO_2^+, NH_2^-, CCH^-, $C_3H_3^+$, C_3H^+, N_2OH^+, $C_2H_2N^+$, etc.,
Anharmonic IR analysis of Polycyclic Aromatic Hydrocarbons (PAH) and derivatives.

Recent Invited Talks

254th ACS National Meeting, *Molecules in Space: Linking the Interstellar Medium to (Exo)-Planets* D.C., USA (08/2017)
Workshop on Astrophysical Opacities, Kalamazoo, MI, USA (08/2017)
Stars and Planets Seminar Series, Harvard-Smithsonian Center for Astrophysics, Boston, MA, USA (03/2017)
Workshop on Mass-Independent Fractionation of Sulfur Isotopes: Possible Molecular Origins, Telluride, CO, USA (2016)

SCI Publications & Citations (*2001-2018*)

Total SCI publications: **74** Articles/Letters/Reviews, **29** 1st-author papers.
71 Articles/Letter/Review have **3048** citations from **>1500** articles, **H-index = 35** *(ISI/Web of Science, 04/2018)*

Full List of Peer-reviewed SCI Articles/Letters/Reviews and Conference Proceedings (*2001-2018*)

1. N. Rangwala, S.W.J. Colgan, R.L. Gal, K. Acharyya, **X. Huang**, T.J. Lee, E. Herbst, C. DeWitt, M. Richter, A. Boogert, M. McKelvey: "*High Spectral Resolution SOFIA/EXES Observations of C_2H_2 toward Orion IRc2*" ApJ **856**, 9 (*2018*), online
2. E. Maltseva, C.J. Mackie, A. Candian, A. Petrignani, **X. Huang**, T.J. Lee, A.G.G.M. Tielens, J. Oomens, and W.Jan Buma: *"High-resolution IR absorption spectroscopy of PAH in the 3 um region: role of hydrogenation and alkylation"*, A&A **610**, A65 (*2018*), online
3. C.J. Mackie, A. Cadian, **X. Huang,** E. Maltseva, A. Petrignani, J. Oomens, W.J. Buma, T.J. Lee and A.G.G.M. Tielens: *The anharmonic quartic force field infrared spectra of hydrogenated and methylated PAHs*", PCCP **20**, 1189-1197 (*2018*), online pdf
4. **X. Huang**, D.W. Schwenke, R.S. Freedman, and T.J. Lee: *Ames-2016 line lists for 13 isotopologues of CO_2: Updates, consistency, and remaining issues.* JQSRT, **203**, 224-241 (*2017*), Open access
5. R.R. Gamache, C. Roller, E. Lopes, I.E. Gordon, L.S Rothman, O.L Polyansky, N.F. Zobov, A.A. Kyuberis, J. Tennyson, S.N. Yurchenko, A.G. Csaszar, T. Furtenbacher, **X. Huang**, D.W. Schwenke, T.J. Lee, B.J. Drouin, S.A. Tashkun, V.I. Perevalov, R.V. Kochanov: *Total internal partition sums for 166 isotopologues of 51 molecules important in planetary atmospheres: Application to HITRAN2016 and beyond* J.Quant.Spectrosc.Ra. **203**, 70-87 (*2017*) online

6. R.C. Fortenberry, T.J. Lee, **X. Huang** : *Towards completing the cyclopropenylidene cycle: rovibrational analysis of cyclic N_3^+, CNN, HCNN$^+$, and CNC*, Phys.Chem.Chem.Phys. **19**, 22860-22869 (*2017*) online
7. **X. Huang**, D.W. Schwenke, T.J. Lee: *Ames $^{16}O^{32}S^{18}O$ line list for high-resolution experimental IR analysis*, J.Mol.Spectrosc. 330, 101-111 (*2016*), online
8. E. Maltseva, A. Petrignani, A. Candian, C.J. Mackie, **X. Huang**, T.J. Lee, A.G.G.M. Tielens, J. Oomens, W.Jan Buma: *High-resolution IR absorption Spectroscopy of Polycyclic Aromatic Hydrocarbons in the 3 μm region: role of Periphery*. ApJ, **831**(1), 58 (*2016*) pdf
9. C.J. Mackie, A. Candian, **X. Huang**, E. Maltseva, A. Petrignani, J. Oomens, W.J. Buma, T.J. Lee, A.G.G.M. Tielens: *The anharmonic force field infrared spectra of five non-linear polycyclic aromatic hydrocarbons: Benzanthracene, chrysene, phenathrene, pyrene, and triphenylene* J.Chem.Phys. **145**, 084313 (*2016*). online
10. D.S. Underwood, J. Tennyson, S.N. Yurchenko, **X. Huang**, D.W. Schwenke, T.J. Lee, S. Clausen, A. Fateev : *ExoMol molecular line lists – XIV. The rotation-vibration spectrum of hot SO_2* Mon.Not.R.Astron.Soc. **459**, 3890 (*2016*). online
11. C.J. Mackie, A. Candian, **X. Huang**, E. Maltseva, A. Petrignani, J. Oomens, W.J. Buma, T.J. Lee, A.G.G.M. Tielens: *The anharmonic quartic force field infrared spectra of three polycyclic aromatic hydrocarbons: Naphthalene, Anthracene, and Tetracene* J. Chem. Phys. **143**, 224314 (*2015*). online pdf
12. E. Maltseva, A. Petrignani, A. Candian, C.J. Mackie, **X. Huang**, T.J. Lee, A.G.G.M. Tielens, J. Oomens, W.J. Buma : *High-resolution IR absorption spectroscopy of polycyclic aromatic hydrocarbons: the realm of anharmonicity* Astrophys. J. **814**(1), 23 (*2015*) PDF
13. C.J. Mackie, A. Candian, **X. Huang**, T.J. Lee, A.G.G.M Tielens : *Linear transformation of anharmonic molecular force constants between normal and Cartesian coordinates* J.Chem.Phys. **142**, 244107 (*2015*) online
14. **X. Huang**, D.W. Schwenke, and T.J. Lee: *Empirical Infrared line lists for five SO_2 isotopologues: $^{32/33/34/36}SO_2$ and $^{32}S^{18}O_2$* J.Mol.Spectrosc., **311**, 19-24 (*2015*). online
15. R.C. Fortenberry, **X. Huang**, T.D. Crawford, T.J. Lee: *Quantum Chemical Rovibrational Data for the Interstellar Detection of c-C_3H^-* Astrophys. J. **796**, 139 (*2014*). online pdf
16. **X. Huang**, R.R. Gamache, R.S. Freedman, D.W. Schwenke, T.J. Lee: *Reliable infrared line lists for 13 CO_2 isotopologues up to E'=18,000 cm^{-1} and 1500 K, with line shape parameters* J.Quant.Spectrosc.Ra., **147**, 134-144 (*2014*). online
17. R.C. Fortenberry, **X. Huang**, T.D. Crawford, T.J. Lee : *Quartic Force Field Rovibrational Analysis of Protonated Acetylene, $C_2H_3^+$, and Its Isotopologues* J.Phys.Chem.A **118**, 7034 (*2014*) online
18. R.C. Fortenberry, **X. Huang**, M.C. McCarthy, T.D. Crawford, T.J. Lee : *Fundamental Vibrational Frequencies and Spectroscopic Constants of cis- and trans-HOCS, HSCO, and Isotopologues via Quartic Force Fields* J.Phys.Chem.B **118**, 6498-6510 (*2014*) online
19. L.-H. Xu, R.M. Lees, J.T. Hougen, J.M. Bowman, **X. Huang**, S. Carter : *Comparison of independently calculated ab initio normal-mode displacements for the three C-H stretching vibrations of methanol along the internal rotation path*. J.Mol.Spectrosc. **299**, 11-16 (*2014*) online
20. **X. Huang**, D.W. Schwenke, and T.J. Lee: *Highly accurate potential energy surface, dipole moment surface, rovibrational energy levels, and infrared line list for $^{32}S^{16}O_2$ up to 8000 cm^{-1}*, J. Chem. Phys. **140**, 114311 (*2014*). online
21. R. C. Fortenberry, **X. Huang**, D.W. Schwenke, and T.J. Lee: *Limited rotational and rovibrational line lists computed with highly accurate quartic force fields and ab initio dipole surfaces*, Spectrochim. Acta Part A, **119**, 76-83 (*2014*). online
22. X. Wang, **X. Huang**, J.M. Bowman, T.J. Lee: *Anharmonic rovibrational calculations of singlet cyclic C_4 using a new ab initio potential and a quartic force field* J.Chem.Phys. **139**, 224302 (*2013*). online
23. N. Inostroza, R.C. Fortenberry, **X. Huang**, and T.J. Lee: *Rovibrational Spectroscopic Constants and Fundamental Vibrational Frequencies for Isotopologues of Cyclic and Bent Singlet HC_2N Isomers*, Astrophys. J., **778**, 160, (*2013*). online pdf
24. **X. Huang**, R.S. Freedman, S. A. Tashkun, D.W. Schwenke, and T. J. Lee: *Semi-empirical $^{12}C^{16}O_2$ IR line lists for simulations up to 1500 K and 20,000 cm^{-1}*, J.Quant.Spectrosc.Ra., **130**, 134-146 (*2013*). online
25. R. C. Fortenberry, **X. Huang**, T.D. Crawford, and T. J. Lee: *The 1 $^3A'$ HCN and 1 $^3A'$ HCO$^+$ Vibrational Frequencies and Spectroscopic Constants from Quartic Force Fields*, J. Phys. Chem. A, **117**, 9324-9330, (*2013*). online
26. **X. Huang**, R.C. Fortenberry, and T. J. Lee: *Protonated nitrous oxide, NNOH$^+$: Fundamental vibrational frequencies and spectroscopic constants from quartic force fields*, J. Chem. Phys., **139**, 084313 (*2013*). online
27. **X. Huang**, R.C. Fortenberry, Y. Wang, J.S. Francisco, T.D. Crawford, J.M. Bowman, and T.J. Lee: *Dipole Surface and Infrared Intensities for the cis-and trans-HOCO and DOCO Radicals*, J. Phys. Chem. A, **117**, 6932–6939, (*2013*). online
28. R.C. Fortenberry, **X. Huang**, T.D. Crawford, and T.J. Lee: *High-accuracy Quartic Force Field Calculations for the Spectroscopic Constants and Vibrational Frequencies of 1 $^1A'$ l-C_3H^-: A Possible Link to Lines Observed in the Horsehead Nebula Photodissociation Region*, Astrophys. J., **772**, 39, (*2013*). online pdf
29. R.C. Fortenberry, **X. Huang**, A. Yachmenev, W. Thiel, and T.J. Lee: *On the Use of Quartic Force Fields in Variational Calculations*, Chem. Phys. Lett, **574**, 1-12, (*2013*). online
30. **X. Huang**, R.C. Fortenberry, and T.J. Lee: *Spectroscopic Constants and Vibrational Frequencies for l-C_3H^+ and Isotopologues from Highly Accurate Quartic Force Fields: The Detection of l-C_3H^+ in the Horsehead Nebula PDR Questioned*, Astrophys. J. Lett. **768**, L25, (*2013*). online PDF

31. R.C. Fortenberry, **X. Huang**, J.S. Francisco, T.D. Crawford, and T.J. Lee : *Fundamental Vibrational Frequencies and Spectroscopic Constants of $HOCS^+$, $HSCO^+$, and Isotopologues via Quartic Force Fields*, J.Phys.Chem.A, **116**, 9582-9590, *2012*. online
32. K. Sung, L.R. Brown, **X. Huang**, D.W. Schwenke, T.J. Lee, S.L. Coy, and K.K. Lehmann : *Extended Line Positions, Intensities, Empirical Lower State Energies and Quantum Assignments of NH_3 from 6300 to 7000 cm^{-1}*, J.Quant.Spectrosc.Ra., **113**, 1066-1083, *2012*. online
33. R.C. Fortenberry, **X. Huang**, J.S. Francisco, T.D. Crawford, and T.J. Lee : *Quartic Force Field Predictions of the Fundamental Vibrational Frequencies and Spectroscopic Constants of the Cations $HOCO^+$ and $DOCO^+$*, J.Chem.Phys., **136**, 234309, *2012*. online
34. **X. Huang**, D.W. Schwenke, and T.J. Lee : *An Isotopic-Independent Highly Accurate Potential Energy Surface for CO_2 Isotopologues and an Initial $^{12}C^{16}O_2$ Infrared Line List*, J. Chem. Phys., **136**, 124311, *2012*. online
35. N. Inostroza, **X. Huang**, and T.J. Lee : *Accurate ab initio Quartic Force Fields of Cyclic and Bent HC_2N Isomers*, J.Chem.Phys., **135**, 244310, *2011*. online
36. R.C. Fortenberry, **X. Huang**, J.S. Francisco, T.D. Crawford, and T.J. Lee : *Vibrational Fundamental Frequencies and Spectroscopic Constants from Quartic Force Fields for cis-HOCO: the Radical and the Anion*, J.Chem.Phys., **135**, 214303, *2011*. online
37. R.C. Fortenberry, **X. Huang**, J.S. Francisco, T.D. Crawford, and T.J. Lee : *The trans-HOCO radical: Quartic Force Fields, Vibrational Frequencies, and Spectroscopic Constants*, J. Chem. Phys., **135**, 134301, *2011*. online
38. **X. Huang**, and T.J. Lee : *Spectroscopic Constants for ^{13}C and Deuterium Isotopologues of Cyclic and Linear $C_3H_3^+$*, Astrophys. J. **736**, 33, *2011*. online PDF
39. **X. Huang**, P.R. Taylor, and T.J. Lee : *Highly accurate quartic force fields, vibrational frequencies, and spectroscopic constants for cyclic and linear $C_3H_3^+$*, J. Phys. Chem. A **115**, 5005-5016, *2011*. online
40. Y. Wang, **X. Huang**, B.C. Shepler, B.J. Braams, and J.M. Bowman : *Flexible, ab initio potential, and dipole moment surfaces for water: I. Tests and applications for clusters up to the 22-mer*, J. Chem. Phys. **134**, 094509, *2011*. online
41. **X. Huang**, D.W. Schwenke, and T.J. Lee : *Rovibrational spectra of Ammonia. II. Detailed analysis, comparison, and prediction of spectroscopic assignments for $^{14}NH_3$, $^{15}NH_3$, and $^{14}ND_3$*, J. Chem. Phys. **134**, 044321, *2011*. online
42. **X. Huang**, D.W. Schwenke, and T.J. Lee : *Rovibrational spectra of Ammonia. I. Unprecedented accuracy of a potential energy surface used with nonadiabatic corrections*, J. Chem. Phys. **134**, 044320, *2011*. online
43. **X. Huang**, E.F. Valeev, and T.J. Lee : *Comparison of one-particle basis set extrapolation to explicitly correlated methods for the calculation of accurate quartic force fields, vibrational frequencies, and spectroscopic constants: Application to H_2O, N_2H^+, NO_2^+, and C_2H_2*, J. Chem. Phys. **133**, 244108, *2010*. online
44. Y. Wang, J.M. Bowman, and **X. Huang** : (Communication) *Prediction of the rate constant of bimolecular hydrogen exchange in the water dimer using an ab initio potential energy surface*, J. Chem. Phys. **133**, 111103, *2010*. pdf (open access)
45. J.M. Bowman, B.J. Braams, S. Carter, C. Chen, G. Czako, B. Fu, **X. Huang**, E. Kamachik, A.R. Sharma, B.C. Shepler, Y. Wang, and Z. Xie : *Ab-initio-based potential energy surfaces for complex molecules and molecular complexes*, J. Phys. Chem. Lett. **1**, 1866-1874, *2010*. online
46. **X. Huang**, and T.J. Lee : *An approach to include the effects of diffuse functions in potential energy surface calculations*, J. Phys. Chem. A **113**, 11954-11962, *2009*. online
47. **X. Huang**, and T.J. Lee : *Accurate ab initio quartic force fields for NH_2^- and CCH^- and rovibrational spectroscopic constants for their isotopologues*, J. Chem. Phys. **131**, 104301, *2009*. online
48. T.J. Lee, **X. Huang**, and C.E. Dateo : *The effect of approximating some molecular integrals in coupled-cluster calculations: fundamental frequencies and rovibrational spectroscopic constants for isotopologues of cyclopropenylidene*, Mol. Phys. **107**, 1139-1152, *2009*. online
49. **X. Huang**, D.W. Schwenke, and T.J. Lee : *An accurate global potential energy surface, dipole moment surface, and rovibrational frequencies for NH_3*, J. Chem. Phys. **129**, 214304, *2008*. online
50. **X. Huang**, and T.J. Lee : *A procedure for computing accurate ab initio quartic force fields: Application to HO_2^+ and H_2O*, J. Chem. Phys. **129**, 044312, *2008*. online
51. **X. Huang**, B.J. Braams, J.M. Bowman, R.E.A. Kelly, J. Tennyson, G.C. Groenenboom, and Ad van der Avoird : *New ab initio potential energy surface and vibrational-rotation-tunneling levels of $(H_2O)_2$ and $(D_2O)_2$*, J. Chem. Phys. **128**, 034312, *2008*. online
52. **X. Huang**, S. Habershon, and J.M. Bowman : *Comparison of quantum, classical, and ring-polymer molecular dynamics infra-red spectra of $Cl^-\cdot(H_2O)$ and $H^+\cdot(H_2O)_2$*, Chem. Phys. Lett. **450**, 253-257, *2007*. online
53. J.M. Bowman, **X. Huang**, N.C. Handy, and S. Carter : *Vibrational levels of methanol calculated by the reaction path version of MULTIMODE, using an ab initio, full-dimensional potential*, J. Phys. Chem. A, **111**, 7317-7321, *2007*. online
54. C.E. Hinkle, A.B. McCoy, **X. Huang**, and J.M. Bowman : *Comment on "Nature of the chemical bond in protonated methane"*, J. Phys. Chem. A. **111**, 2033-2034, *2007*. online
55. J. Wu, **X. Huang**, S. Carter, and J.M. Bowman : *Tests of MULTIMODE calculations of rovibrational energies of CH_4*, Chem. Phys. Lett. **426**, 285-289, *2007*. online
56. **X. Huang**, L.M. Johnson, J.M. Bowman, and A.B. McCoy : *Deuteration effects on the structure and Infrared spectrum of CH_5^+*, J. Am. Chem. Soc. **128**, 3478-3479, *2006*. online

57. **X. Huang**, B.J. Braams, and J.M. Bowman : *Ab initio potential energy and dipole moment surfaces of $(H_2O)_2$*, J. Phys. Chem. A. **110**, 445-451, *2006*. online
58. J.M. Bowman, **X. Huang**, L.B. Harding, and S. Carter : *The determination of molecular properties from MULTIMODE with an application to the calculation of Franck-Condon factors for photoionization of CF_3 to CF_3^+*, Mol. Phys. **104**, 33-45, *2006*. online
59. **X. Huang**, A.B. McCoy, J.M. Bowman, L.M. Johnson, C. Savage, F. Dong, and D.J. Nesbitt : *Quantum deconstruction of the Infrared spectrum of CH_5^+*, Science **311**, 60-63, *2006*. online
60. A.B. McCoy, **X. Huang**, S. Carter, and J.M. Bowman : *Quantum studies of the vibrations in $H_3O_2^-$ and $D_3O_2^-$*, J. Chem. Phys. **123**, 064317, *2005*. online
61. N.I. Hammer, E.G. Diken, J.R. Roscioli, M.A. Johnson, E.M. Myshakin, K.D. Jordan, A.B. McCoy, **X. Huang**, J. M. Bowman, and S. Carter : *The vibrational predissociation spectra of the $H_5O_2^+ \cdot RG_n (RG=Ar,Ne)$ clusters: Correlation of the solvent perturbations in the free OH and shared proton transitions of the Zundel ion*, J. Chem. Phys. **122**, 244301, *2005*. online
62. A.B. McCoy, **X. Huang**, S. Carter, M.Y. Landeweer, and J.M. Bowman : *Full-dimensional vibrational calculations for $H_5O_2^+$ using an ab initio potential energy surface*, J. Chem. Phys. **122**, 061101, *2005*. online
63. E.G. Diken, J.M. Headrick, J.R. Roscioli, J.C. Bopp, M.A. Johnson, A.B. McCoy, **X. Huang**, S. Carter, and J.M. Bowman : *Argon predissociation spectroscopy of the $OH^- \cdot H_2O$ and $Cl^- \cdot H_2O$ complexes in the 1000-1900 cm^{-1} region: Intramolecular bending transitions and the search for the shared-proton fundamental in the hydroxide monohydrate*, J. Phys. Chem. A **109**, 571-575, *2005*. online
64. **X. Huang**, B.J. Braams, and J.M. Bowman : *Ab initio potential energy and dipole moment surfaces for $H_5O_2^+$*, J. Chem. Phys., **122**, 044308, *2005*. online
65. A.B. McCoy, B.J. Braams, A. Brown, **X. Huang**, Z. Jin, and J.M. Bowman : *Ab initio diffusion Monte Carlo calculations of the quantum behavior of CH_5^+ in full dimensionality*, J. Chem. Phys. **108**, 4991-4994, *2004*. online
66. **X. Huang**, B.J. Braams, S. Carter, and J.M. Bowman : *Quantum calculations of vibrational energies of $H_3O_2^-$ on an ab initio potential*, J. Am. Chem. Soc., **126**, 5042–5043, *2004*. online
67. A.L. Kaledin, **X. Huang**, and J.M. Bowman : *Comparison of classical, new corrected-classical, and semiclassical IR spectra of non-rotating H_2O with quantum calculations*, Chem. Phys. Lett. **384**, 80-85, *2004*. online
68. J. Dai, Z. Bacic, **X. Huang**, S. Carter, and J.M. Bowman : *A theoretical study of vibrational mode coupling in $H_5O_2^+$*, J. Chem. Phys. **119**, 6571-6580, *2003*. online
69. **X. Huang**; H.M. Cho; S. Carter; L. Ojamäe; J.M. Bowman; S.J. Singer : *Full dimensional calculations of vibrational energies of $H_5O_2^+$* , J. Phys. Chem. A, **107**, 7142–7151, *2003*. online
70. J.M. Bowman, S. Carter, and **X. Huang** : *MULTIMODE: a code to calculate rovibrational energies of polyatomic molecules*, Int. Rev. Phys. Chem. **22**, 533-549, *2003*. online
71. **X. Huang**, S. Carter, and J.M. Bowman : *Ab initio potential energy surface and rovibrational energies of H_3O^+ and its isotopomers*, J. Chem. Phys. **118**, 5431-5441, *2003*. online
72. **X. Huang**, S. Carter, and J.M. Bowman : *Ab initio potential energy surface and rovibrational energies of H_3O^+ and its isotopomers*, J. Phys. Chem. B **106**, 8182-8188, *2002*. online
73. J.M. Bowman, **X. Huang**, and S. Carter : *Full dimensional calculations of vibrational energies of H_3O^+ and D_3O^+*, Spectrochim. Acta Part A **58**, 839-848, *2002*. online
74. J.M. Bowman, D. Wang, **X. Huang**, F. Huarte-Larranaga, and U. Manthe : *The importance of an accurate CH_4 vibrational partition function in full dimensionality calculations of the $H+CH_4 \rightarrow H_2+CH_3$ reaction*, J. Chem. Phys. **114**, 9683-9684, *2001*. online

Previous Scientific Presentations

8^{th} Molecular Quantum Mechanics, Uppsala, Sweden (2016)
44^{th}–48^{th} American Geophysical Union (AGU) Fall meeting, San Francisco, USA (2011-2015).
International Astronomical Union General Assembly XXIX, FM12, Honolulu , USA (2015).
70^{th} International Symposium on Molecular Spectroscopy, UIUC, Illinois, USA (2015).
First Workshop on Experimental Laboratory Astrophysics, Kauai, HI, USA (2013)
Workshop on Molecular Spectroscopy in the Era of Far-IR Astronomy, Atlanta, GA, USA (2012)
International Astronomical Union General Assembly XXVIII, SpS16 and S292, Beijing, China (2012).
Astrobiology Science Conference 2012, Atlanta, GA, USA (2012).
64^{th}/65^{th}/67^{th} International Symposium on Molecular Spectroscopy, Columbus, Ohio, USA (2009-2010,2012).
Molecular Quantum Mechanics 2010, Berkeley, CA, USA (2010)
59^{th} Annual Conference of the Western Spectroscopy Association, Pacific Grove, CA, USA (2010)
227^{th} -239^{th} ACS National Meeting, USA (2004-2009).
Advanced Workshop on Theoretical and Computational Methods for Molecular Spectroscopy and Collisions: Application to Astrophysical and Atmospheric Relevant Systems, Granada, Spain (2009).
Invited talks at Sichuan Univ., Suzhou Univ., & Dalian Institute of Chemical Physics (CAS), China (2009).
The 2008 World Congress of WATOC, Sydney, Australia (2008).
Gordon Conference on Molecular Energy Transfer 2005, Santa Barbara, CA, USA (2005).
Conference on Dynamics of Molecular Collisions 2003, Lake Tahoe, CA, USA (2003).
SERMACS, USA (2003-2005).