

Wolfgang E. Ernst, publications on gas phase diatomic molecules (many alkaline earth monohalides and oxides)

1. **W. E. Ernst and T. Törring, Microwave Optical Polarization Spectroscopy, Phys. Rev. A25 (Rapid Communications), 1236-1238 (1982).**
2. W. E. Ernst and T. Törring, Hyperfine Structure in the $X^2\Sigma$ State of CaCl Measured with Microwave-Optical Polarization Spectroscopy, Phys. Rev. A27, 875-880 (1983).
3. W. E. Ernst, Doppler-Free Polarization Spectroscopy of Diatomic Molecules in Flame Reactions, Opt. Commun. 44, 159-164 (1983).
4. W. E. Ernst, Microwave-Optical Polarization Spectroscopy of the $X^2\Sigma$ State of SrF, Appl. Phys. B30, 105-108 (1983).
5. W. E. Ernst and S. Kindt, A Molecular Beam Laser-Microwave Double-Resonance Spectrometer for Precise Measurements of High Temperature Molecules, Appl. Phys. B31, 79-83 (1983).
6. W. E. Ernst, Microwave Modulated Polarization Spectroscopy, Opt. Commun. 46, 18-22 (1983).
7. W. E. Ernst and J. O. Schröder, The $B^2\Sigma^+ - X^2\Sigma^+$ System of SrF: Precise Spectroscopic Constants from a Combined Fit of Microwave and sub-Doppler Optical Spectra, Chem. Phys. 78, 363-368 (1983).
8. **W. E. Ernst, S. Kindt, and T. Törring, Precise Stark-Effect Measurements in the 2Σ -Ground State of CaCl, Phys. Rev. Lett. 51, 979-981 (1983).**
9. S. Kindt, W. E. Ernst, and T. Törring, Stark Effect Measurements on Ca^{79}Br $X^2\Sigma$, Chem. Phys. Lett. 103, 241-244 (1983).
10. W. E. Ernst, S. Kindt, K. P. R. Nair, and T. Törring, Determination of the Ground State Dipole Moment of CaCl from Molecular-Beam Laser Microwave Double Resonance Measurements, Phys. Rev. A29, 1158-1163 (1984).
11. **T. Törring, W. E. Ernst, and S. Kindt, Dipole Moments and Potential Energies of the Alkaline Earth Monohalides from an Ionic Model, J. Chem. Phys. 81, 4614-4619 (1984).**
12. W. E. Ernst and J. O. Schröder, Doppler Free Polarization Spectroscopy of SrCl: The $B^2\Sigma^+ - X^2\Sigma^+$ System, J. Chem. Phys. 81, 136-142 (1984).
13. W. E. Ernst and J. O. Schröder, Microwave-Optical Polarization Spectroscopy of Excited States, Phys. Rev. A30 (Rapid Communications) 665-666 (1984).
14. W. E. Ernst, J. O. Schröder, and T. Törring, Hyperfine Structure of SrCl $X^2\Sigma^+$ by Microwave-Optical Polarization Spectroscopy, Chem. Phys. Lett. 109, 175-178 (1984).
15. W. E. Ernst, J. Kändler, S. Kindt, and T. Törring, Electric Dipole Moment of SrF $X^2\Sigma^+$ from High Precision Stark Effect Measurements, Chem. Phys. Lett. 113, 351-354 (1985).

16. J. O. Schröder and W. E. Ernst, The $B^2\Sigma^+$ - $X^2\Sigma^+$ System of $Sr^{79}Br$ and $Sr^{81}Br$: Rotational and Vibrational Analysis, *J. Mol. Spectrosc.* 112, 413-429 (1985).
17. W. E. Ernst, J. Kändler, J. Lüdtke, and T. Törring, Precise Measurement of the Ground State Dipole Moment of CaI, *J. Chem. Phys.* 83, 2744-2747 (1985).
18. W. E. Ernst, G. Weiler, and T. Törring, Rotational Spectrum and Hyperfine Structure in the $X^2\Sigma^+$ State of BaBr, *Chem. Phys. Lett.* 121, 454-458 (1985).
19. W. E. Ernst, J. O. Schröder and J. Kändler, Electronic Structure of Alkaline Earth Monohalides from Laser-Microwave Double Resonance Spectroscopy, in: *Laser Spectroscopy VII*, eds. T. W. Hansch, and Y. R. Shen, Springer Ser. Opt. Sci. Vol. 49, Springer, Berlin, 1985, p. 142-143.
20. W. E. Ernst and J. O. Schröder, Polarization Spectroscopy of $Sr^{79}Br$ and $Sr^{81}Br$: Analysis of the $X^2\Sigma^+$ and $B^2\Sigma^+$ Hyperfine Structure, *Z. Phys. D* 1, 103-112 (1986).
21. W. E. Ernst, J. O. Schröder, U. Buck, J. Kesper, T. Seelemann, L.-E. Berg and H. Martin, Combined Analysis of Laser and Microwave Spectroscopy on CaCl: The $A^2\Pi$ - $X^2\Sigma^+$ and $B^2\Sigma^+$ - $X^2\Sigma^+$ Systems, *J. Mol. Spectrosc.* 117, 342-354 (1986).
22. W. E. Ernst, J. Kändler, and T. Törring, The Ground State Dipole Moment of BaI from High Precision Stark Spectroscopy, *Chem. Phys. Lett.* 123, 243-245 (1986).
23. W. E. Ernst and J. O. Schröder, Analysis of Perturbations in the $B^2\Sigma^+$ - $X^2\Sigma^+$ System of SrBr, *J. Mol. Spectrosc.* 117, 444-447 (1986).
24. W. E. Ernst, J. Kändler, and T. Törring, Hyperfine Structure and Electric Dipole Moment of BaF $X^2\Sigma^+$, *J. Chem. Phys.* 84, 4769-4773 (1986).
25. W. E. Ernst, J. O. Schröder, and J. Kändler, High Resolution Spectroscopy of Alkaline Earth Monohalides: Perturbation Analysis, Hyperfine Structure and Stark Effect, in: *Methods of Laser Spectroscopy*, ed. Yehiam Prior, Plenum Press, New York, 1986, p. 191-200.
26. W. E. Ernst and J. Kändler, Experimental Determination of the Electric Dipole Moments in the $A^2\Pi$ and $B^2\Sigma^+$ States of CaCl, *Phys. Rev. A* 33 (Rapid Commun.), 3588-3590 (1986).
27. W. E. Ernst, J. Kändler, C. Noda, J. S. McKillop and R. N. Zare, Hyperfine Structure of the BaI $X^2\Sigma$ and $C^2\Pi$ State, *J. Chem. Phys.* 85, 3735-3743 (1986).
28. W. E. Ernst, Double Resonance Techniques for the High Resolution Spectroscopy of Unstable Molecules, *AIP Conf. Proc. (USA)* No. 160, 359-363 (1987) (Advances in Laser Science II).
29. J. O. Schröder, B. Zeller, and W. E. Ernst, The $A^2\Pi$ - $X^2\Sigma^+$ Transition of SrCl: Rotational Analysis and Deperturbation, *J. Mol. Spectrosc.* 127, 255-271 (1988).
30. C. Nitsch, J. O. Schröder and W. E. Ernst, Optical-Optical Double Resonance Spectroscopy of SrF. The $F^2\Sigma$ - $B^2\Sigma^+$ and $G^2\Pi$ - $B^2\Sigma^+$ Systems, *Chem. Phys. Lett.* 148, 130-135 (1988).

31. J. O. Schröder, C. Nitsch, and W. E. Ernst, Polarization Spectroscopy of SrI in a Heat Pipe: the $B^2\Sigma^+$ - $X^2\Sigma^+$ System, *J. Mol. Spectrosc.* 132, 166-177 (1988).
32. W. E. Ernst and J. Kändler, Different Polarization of the $A^2\Pi$ and $C^2\Pi$ State Wave Functions in CaF Observed by Visible and UV Stark Spectroscopy, *Phys. Rev. A* 39, 1575-1578 (1989) (Rapid Communication).
33. T. Törring, W. E. Ernst and J. Kändler, Energies and Electric Dipole Moments of the Low Lying Electronic States of the Alkaline Earth Monohalides from an Electrostatic Polarization Model, *J. Chem. Phys.* 90, 4927-4932 (1989).
34. J. Kändler, T. Martell and W. E. Ernst, Electric Dipole Moments and Hyperfine Structure of SrF $A^2\Pi$ and $B^2\Sigma^+$, *Chem. Phys. Lett.* 155, 470-474 (1989).
35. W. E. Ernst, J. O. Schröder and B. Schaal, Hyperfine Structure of SrI $X^2\Sigma^+$ measured by Polarization Spectroscopy, *Chem. Phys. Lett.* 155, 47-51 (1989).
36. W. E. Ernst, J. O. Schröder and B. Zeller, Rotational Analysis and Deperturbation of the SrI $A^2\Pi$ - $X^2\Sigma^+$ System, *J. Mol. Spectrosc.* 135, 161-168 (1989).
37. W. E. Ernst and J. Kändler, Molecular Beam Spectroscopy of High Temperature Species with Narrowband Dye Lasers, *Appl. Phys. B* 49, 227-237 (1989).
38. W. E. Ernst and J. Kändler, High Resolution Spectroscopy of Molecules and Small Clusters in Molecular Beams, in: *Laser Spectroscopy IX*, eds. M. S. Feld, J. E. Thomas, and A. Mooradian, Academic Press, San Diego, CA, 1989, 408-411.
39. S. Rakowsky, D. Zimmermann, and W. E. Ernst, Accurate Determination of Wavenumbers for Iodine Molecular Lines in the Red Spectral Region, *Appl. Phys. B* 48, 463-366 (1989).
40. P. H. Vaccaro, D. Zhao, A. A. Tsekouras, C. A. Leach, W. E. Ernst, and R. N. Zare, Laser Spectroscopy of Crossed Molecular Beam Reactions: the Dissociation Energy of BaI from Precise Energy Balance Measurements, *J. Chem. Phys.* 93, 8544-8556 (1990).
41. W. E. Ernst, J. Kändler, and O. Knüppel, High Resolution UV Laser Spectroscopy of CaF: Rotational Analysis of the $C^2\Pi$ - $X^2\Sigma^+(0,0)$ System, *J. Mol. Spectrosc.* 153, 81-90 (1992), special issue in honor of T. Oka's 60th birthday.
42. R. F. W. Herrmann, G. K. Sumnicht, M. Stein, and W. E. Ernst, The Orange Band System of SrO: First Details about the Triplet Transitions, *J. Mol. Spectrosc.* 156, 487-500 (1992).
43. C. M. Gittins, N. A. Harris, R. W. Field, J. Verges, C. Effantin, A. Bernard, J. d'Incan, W. E. Ernst, P. Bündgen, and B. Engels, Analysis and Deperturbation of the $C^2\Pi$ and $D^2\Sigma^+$ States of CaF, *J. Mol. Spectrosc.* 161, 303-311 (1993).
44. G. Auböck, C. Binder, L. Holler, V. Wippel, K. Rumpf, J. Szczepkowski, W. E. Ernst and L. Windholz, Trap loss collisions of ${}^6\text{Li}$ and ${}^7\text{Li}$ with ${}^{23}\text{Na}$ in a combined magneto-optical trap, *J. Phys. B: At. Mol. Opt. Phys.* 39 S871-S879 (2006).

45. Robert Beuc, Mladen Movre, Ticijana Ban, Goran Pichler, Mireille Aymar, Olivier Dulieu, and Wolfgang E. Ernst, Predictions for the observation of KRb spectra under cold conditions, *J. Phys. B: At. Mol. Opt. Phys.* **39** S1191–S1201 (2006).
46. Gerald Auböck, Mireille Aymar, Olivier Dulieu, and Wolfgang E. Ernst, Reinvestigation of the Rb₂ (2) $^3\Pi_g$ – a $^3\Sigma_u^+$ Band on Helium Nanodroplets, *J. Chem. Phys.* **132**, 054304-1-7 (2010), also February 15, 2010 issue of Virtual Journal of Nanoscale Science & Technology, <http://www.vjnano.org>
47. Günter Krois, Johann V. Pototschnig, Florian Lackner, and Wolfgang E. Ernst, Spectroscopy of cold LiCa formed on helium nanodroplets, *J. Phys. Chem. A* **117** (50), 13719–13731 (2013), <http://dx.doi.org/10.1021/jp407818k> (Festschrift in honor of Terry Miller).
48. Johann V. Pototschnig, Martin Ratschek, Andreas W. Hauser, and Wolfgang E. Ernst, An ab initio study of the CrHe diatomic: The effect of van der Waals distortion on a highly magnetic multi-electron system, *PCCP* **16**, 9469-9478 (2014), <http://dx.doi.org/10.1039/C4CP00559G>.
49. Günter Krois, Florian Lackner, Johann V. Pototschnig, Thomas Buchsteiner, and Wolfgang E. Ernst, Characterization of RbSr Molecules: A Spectral Analysis on Helium Droplets, *PCCP* **16**, 22373-22381 (2014), <http://dx.doi.org/10.1039/C4CP03135K>.
50. **Florian Lackner, Günter Krois, Thomas Buchsteiner, Johann V. Pototschnig, and Wolfgang E. Ernst, Helium Droplet Assisted Preparation of Cold RbSr Molecules, Phys. Rev. Lett. 113, 153001-1-5 (2014),** <http://dx.doi.org/10.1103/PhysRevLett.113.153001>.
51. Johann V. Pototschnig, Günter Krois, Florian Lackner, and Wolfgang E. Ernst, Ab initio study of the RbSr electronic structure: Potential energy curves, transition dipole moments and permanent electric dipole moments, *J. Chem. Phys.* **141**, 234309-1-10 (2014) , <http://dx.doi.org/10.1063/1.4903791>.
52. **Johann Valentin Pototschnig, Günter Krois, Florian Lackner, Wolfgang E. Ernst, Investigation of the RbCa Molecule: Experiment and Theory, J. Mol. Spectrosc. 310, 126-134 (2015) (special issue in honor of Marilyn Jacox),** <http://dx.doi.org/10.1016/j.jms.2015.01.006>.
53. **Johann V. Pototschnig, Andreas W. Hauser, and Wolfgang E. Ernst, Electric Dipole Moments and Chemical Bonding of Diatomic Alkali - Alkaline Earth Molecules, PCCP 18, 5964-5973 (2016),** <http://dx.doi.org/10.1039/C5CP06598D>.
54. **Johann V. Pototschnig, Ralf Meyer, Andreas W. Hauser, and Wolfgang E. Ernst, Vibronic transitions in the AK-AKE series (AK=Li, Na, K, Rb; AKE=Ca, Sr): A systematic analysis of de-excitation mechanisms based on the graphical mapping of Frank-Condon integrals, Phys. Rev. A 95, 022501-1-18 (2017),** <http://journals.aps.org/prab/abstract/10.1103/PhysRevA.95.022501>.
55. Florian Lackner and Wolfgang E. Ernst, Photo-induced Molecule Formation of Spatially Separated Atoms on Helium Nanodroplets, *J. Phys. Chem. Lett.* **9** (13), 3561–3566 (2018), <https://pubs.acs.org/doi/10.1021/acs.jpclett.8b01530>.