Curriculum Vita

Zoltan Sternovsky

ASSOCIATE PROFESSOR
LABORATORY FOR ATMOSPHERIC AND SPACE PHYSICS
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EDUCATION

2001 Charles University, Prague, Czech Republic
Ph.D. in Physics (Elementary processes in dusty plasmas)

1998 Charles University, Prague, Czech Republic
M.S. in Physics

PROFESSIONAL EXPERIENCE

2016 – Present Associate Professor
LASP, University of Colorado & Smead Aerospace Engineering Sciences, University of Colorado

2009 – 2016 Assistant Professor
LASP, University of Colorado &
Smead Aerospace Engineering Sciences, University of Colorado

2005 – Present Research Scientist
LASP, University of Colorado

2002 – 2004 Research Associate
Physics Department, University of Colorado

1999 – 2002 Research Assistant
Physics Department, University of Colorado

1998 – 1999 Graduate Research Assistant
Charles University, Prague, Czech Republic

HONORS AND AWARDS

2016 – Promotion to Associate Professor, Smead Aerospace Engineering Sciences Department, University of Colorado

2016 – Outstanding Junior Faculty, Smead Aerospace Engineering Sciences

2011 - Young Scientist Award, Union of Pure and Applied Physics (IUPAP), "…pioneering contribution to the study of charged dust particle dynamics in laboratory and space plasmas"

PUBLICATIONS

Peer-Reviewed Journal Articles*†

1. **Z. Sternovsky**, E. Ayari, E. Q. Williams, M. Deluca, E. Grün, M. Horanyi, S. Kempf, F. Postberg, Ion optics optimization for in situ cosmic dust analyzer instruments, in preparation (2023).

2. L. K. Tarnecki, R. A. Marshall, Z. Sternovsky, Tobin Munsat, Experimentally derived luminous efficiencies for aluminum and iron at meteoric speeds, *Geophys. Res. Lett.*, submitted (2023).

3. Lisa Maria Eckart, Jon K. Hillier, Frank Postberg, Simone Marchi, **Zoltan Sternovsky**, Linking Asteroid Parent Bodies to Meteorite Types: The Capabilities of Dust Analyzer Instruments during Asteroid Flybys, *Meteoritics & Planetary Science*, submitted *(2023)*

4. Veerle J. Sterken, S. Hunziker, K. Dialynas, K. Herbst, A. Li, L. R. Baalmann, K. Scherer, P. Strub, R. Srama, M. Trieloff, M. Blanc, M. Sommer, M. Rowan-Robinson, H. Krüger, F. Effenberger, J. Richardson, D. Malaspina, H.-W. Hsu, M. Horanyi, **Z. Sternovsky**, J. Slavin, J. Linsky, S. Redfield1, A. Poppe, J. Szalay, C. Lisse, E. Provornikova, M. Opher, A. Galli, F. Postberg, A. Czechowski, P. Frisch, W. S. Kurth, M. Shen, G. Stober, I. Mann, N.F.W. Ligterink, J.A. Miller, B. Fields, W. J. Baggaley, and P. Brandt, Synergies between interstellar dust and heliospheric science with an Interstellar Probe, *RAS Techniques and Instruments*, submitted, (2022).

5. Mitchell M. Shen*, **Zoltan Sternovsky**, David Malaspina, Variability of Antenna Signals from Dust Impacts, *J. Geophys. Res*., in revision (2022).

6. Z. Ulibarri, T. Munsat, M. Voss, J. Fontanese, M. Horányi, S. Kempf, **Z. Sternovsky**, Detection of the amino acid histidine and its breakup products in hypervelocity impact ice spectra. *Icarus* (2023), doi: https://doi.org/10.1016/j.icarus.2022.115319.

7. Michael DeLuca, **Zoltan Sternovsky**, Steven P. Armes, Lee Fielding, Mihály Horányi, Diego Janches, Zoltan Kupihar, Tobin Munsat, and John M. C. Plane, Differential Ablation of Organics from Micrometeoroids Simulated in the Laboratory, *J Geophys Res Planets* 127, (2022).

8. Mitchell M. Shen, **Sternovsky, Z**., Garzelli, A., & Malaspina, D. M. (2021). Electrostatic model for antenna signal generation from dust impacts. Journal of Geophysical Research: Space Physics, 126, e2021JA029645. https://doi. org/10.1029/2021JA029645

* Underlined names indicate student authors.

9. Ming-Hsueh Shen, **Zoltan Sternovsky**, Mihaly Horanyi, Hsian-Wen Hsu, David Malaspina, Antenna signals generated by dust impacts on spacecraft (2021). Laboratory study of antenna signals generated by dust impacts on spacecraft. *Journal of Geophysical Research: Space Physics*, *126*, e2020JA028965. https://doi. org/10.1029/2020JA028965

10. L. Nouzák, D. James, Z. Němeček, J. Šafránková, J. Pavlů, J. Nováková, J. Vaverka, and **Z. Sternovsky** (2021), Detection of dust particles using Faraday cup instruments, *Astrophysical Journal*, *909*(2). http://doi.org/10.3847/1538-4357/abd6e7

11. Samuel Kočiščák‡, Åshild Fredriksen, Michael DeLuca, Jií Pavlu, and **Zoltan Sternovsky**, Effective Temperatures of Olivine Dust Impact Plasmas, *IEEE Trans. Plasma Sci.* 48, 4298 – 4304, http://doi.org/10.1109/TPS.2020.3033578 (2020).

12. L. Nouzák, **Z. Sternovsky**, M. Horányi, S. Hsu, J. Pavlů, M.-H. Shen, S.-Y. Ye, Magnetic field effect on antenna signals induced by dust particle impacts, *J. Geophys. Res.* 125, https://doi.org/10.1029/2019JA027245 (2020).

13. Ingrid Mann, Libor Nouzák, Jakub Vaverka, Tarjei Antonsen, Åshild Fredriksen, Karine Issautier, David Malaspina, Nicole Meyer-Vernet, Jiří Pavlů, **Zoltan Sternovsky**, Joan Stude, Shengyi Ye, Arnaud Zaslavsky, Dust observations with antenna measurements and its prospects for observations with Parker Solar Probe and Solar Orbiter., *Annales Geophysicae*, *37*(6), 1121–1140. http://doi.org/10.5194/angeo-37-1121 (2019).

14. S. -Y. Ye, J. Vaverka, L. Nouzak, **Z. Sternovsky**, A. Zaslavsky, I. Mann, H.-W. Hsu, T. F. Averkamp, A. H. Sulaiman, D. Pisa, J. Pavlu, G. B. Hospodarsky, W. S. Kurth, M. Horanyi, Understanding Cassini RPWS Antenna Signals triggered by dust impacts, *Geophys. Res. Lett.*, *46*(20), 10941–10950. http://doi.org/10.1029/2019GL084150 (2019).

15. Barrie, A. C., F. Cipriani, C. P. Escoubet, S. Toledo-Redondo, R. Nakamura, K. Torkar, **Z. Sternovsky**, S. Elkington, D. Gershman, B. Giles, and C. Schiff, Characterizing Spacecraft Potential Effects on Measured Particle Trajectories, *Phys. Plasmas*, *26*(10), 103504–13. http://doi.org/10.1063/1.5119344 (2019).

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17. Cohen, B. A., Szalay, J. R., Rivkin, A. S., Richardson, J. A., Klima, R. L., Ernst, C. M., Chabot, N. L., **Sternovsky**, Z., Horanyi, M. (2019). Using dust shed from asteroids as microsamples to link remote measurements with meteorite classes. *Meteoritics & Planetary Science*, *448*, 243–21. http://doi.org/10.1111/maps.13348

18. N. Swarnalingam, D. Janches, J. D. Carrillo-Sanchez, P. Pokorny, J. Plane, **Z. Sternovsky**, and D. Nesvorny, Modeling the Altitude Distribution of Meteor Head Echoes Observed with HPLA Radars - Implications on the Radar Detectability of Meteoroid Populations, *Astronom. J.*, *157*(5), 179. http://doi.org/10.3847/1538-3881/ab0ec6 (2019).

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20. A. C. Barrie, S. Elkington, **Z. Sternovsky**, D. Smith, B. Giles, and C. Schiff, Wavelet Compression Performance of MMS/FPI Plasma Count Data. *Earth and Space Science*, 2018EA000430–20. http://doi.org/10.1029/2018EA000430 (2019).

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38. D. M. Malaspina, L. O'Brien, F. Thayer, **Z. Sternovsky**, A. Collette, Revisiting STEREO Interplanetary and Interstellar Dust Flux and Mass Estimates, J. Geophys. Res. Space Physics, 120, doi:10.1002/2015JA021352 (2015).

39. A. Collette, G. Meyer, D. Malaspina, and **Z. Sternovsky**, Laboratory investigation of antenna signals from dust impacts on spacecraft, J Geophys Res-Space, DOI:10.1002/2015JA021198 (2015).

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42. M. Horanyi, Z. **Sternovsky**, M. Lankton, C. Dumont, S. Gagnard, D. Gathright, E. Grün, D. Hansen, D. James, S. Kempf, B. Lamprecht, R. Srama, J. R. Szalay, and G. Wright, "The Lunar Dust Experiment (LDEX) Onboard the Lunar Atmosphere and Dust Environment Explorer (LADEE) Mission," Space Sci Rev 185, 93-113, DOI: 10.1007/s11214-014-0118-7 (2014).

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44. L. O'Brien, S. Auer, A. Gemer, E. Grün, M. Horanyi, A. Juhasz, S. Kempf, D. Malaspina, A. Mocker, E. Moebius, R. Srama, Z. **Sternovsky**, Development of the Nano-Dust Analyzer (NDA) For Detection and Compositional Analysis of Nanometer-Size Dust Particles Originating in the Inner Heliosphere, in press, Rev. Sci. Instrum., 85, 035113 doi: 10.1063/1.48685062014 (2014).

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46. **Z. Sternovsky**, S. Robertson, S. Dickson, J. Gumbel, J. Hedin, B. Strelnikov, H. Asmus, O. Havnes, In-situ Detection of Noctilucent Cloud Particles by the Colorado Dust Detectors onboard the PHOCUS Sounding Rocket, J. Atmos Sol-Terr Phys. 118, 145–150, DOI: 10.1016/j.jastp.2014.01.018 (2014).

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