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Education

Undergraduate: B.A. in Chemistry and Physics (highest honors), Harvard University, 1976
Graduate: Ph.D. in Physics, Stanford University, 1982

Appointments

Staff Member, T-11 and T-4, Los Alamos National Laboratory, August 1986 to present
Assistant Professor of Physics, Princeton University, September 1984 to July 1986
Postdoctoral Fellow, Cornell University, September 1982 to August 1984
IBM Postdoctoral Fellow, Stanford University, January 1982 to August 1982

Publications

1. *Magnetic exchange interaction between rare-earth and Mn ions in multiferroic hexagonal manganites*, D. Talbayev, A. D. LaForge, S. A. Trugman, N. Hur, A. J. Taylor, R. D. Averitt, and D. N. Basov, Phys. Rev. Lett. 101, 247601 (2008). (CINT funded)
2. *Electronic control of extraordinary terahertz transmission through subwavelength metal hole arrays*, Hou-Tong Chen, Hong Lu, A. K. Azad, R. D. Averitt, A. C. Gossard, S. A. Trugman, J. F. O'Hara, and A. J. Taylor, Optics Express 16, 7641 (2008). (CINT)
3. *Ultrafast electron and hole dynamics in germanium nanowires*, R. P. Prasankumar, S. Choi, S. A. Trugman, S. T. Picraux, and A. J. Taylor, Nano Letters 8, 1619 (2008). (CINT)
4. *Solution of the Holstein polaron anisotropy problem*, Alvermann, H. Fehske, and S. A. Trugman (2008), Phys. Rev. B 78, 165106 (2008). (CINT)
5. *Detection of coherent magnons via transient reflectance in Ba_{0.6}Sr_{1.4}Zn₂Fe₁₂O₂₂*, D. Talbayev, S. A. Trugman, A. V. Balatsky, T. Kimura, A. J. Taylor, and R. D. Averitt, Phys. Rev. Lett. 101, 097603 (2008). (also selected for the September 8, 2008 issue of the Virtual Journal of Nanoscale Science & Technology). (CINT)
6. *Heavy holes as a precursor to superconductivity in antiferromagnetic CeIn₃*, S. E. Sebastian, N. Harrison, C. D. Batista, S. A. Trugman, V. Fanelli, M. Jaime, T. P. Murphy, E. C. Palm, H. Harima, Proc. National Academy of Sciences 106, 7741 (2009).
7. *Quantum dynamics of polaron formation*, Li-Chung Ku and S. A. Trugman, Phys. Rev. B 75, 014307 (2007).
8. *Coupled charge-spin dynamics in the magnetoresistive pyrochlore Tl₂Mn₂O₇ probed using ultrafast mid-infrared spectroscopy*, R. P. Prasankumar, H. Okamura, H. Imai, Y. Shimakawa, Y. Kubo, S. A. Trugman, A. J. Taylor, and R. D. Averitt, Phys. Rev. Lett. 95, 267404 (2005).
9. *Exact ground states of a frustrated 2D magnet: deconfined fractional excitations at a first order quantum phase transition*, C. D. Batista and S. A. Trugman, Phys. Rev. Lett. 93, 217202 (2004).
10. *The Effect of Inelastic Processes on Tunneling*, Janez Bonca and S. A. Trugman, Phys. Rev. Lett. 75, 2566 (1995).

Honors: Los Alamos Fellows Prize for outstanding research, 1996.

Publications: Over 110 journal articles.

Collaborators (last 48 months): A. K. Azad, A. V. Balatsky, C. D. Batista, E. D. Bauer, H.-T. Chen, I. Grigorenko, M. J. Graf, N. Harrison, J. Hollingsworth, M. Jaime, J. L. Kiplinger, D. J. Morris, S. T. Picraux, R. P. Prasankumar, J. L. Sarrao, A. P. Shreve, A. J. Taylor, J. D. Thompson, J.-X. Zhu (all LANL); A. Alvermann (Greifswald), R. D. Averitt (Boston U.), K. B. Blagoev (Washington DC), D. N. Basov (UCSD), K. S. Burch (U. Toronto), E. Chia (Malaysia), H. Fehske (Greifswald), M. Galperin (UCSD), A. C. Gossard (UCSB), D. J. Hilton (Alabama), J. N. Mitchell (Argonne), Z. Nussinov (Washington U.), S. Redner (Boston U.), S. E. Sebastian (Cambridge), D. Talbayev (Yale), V. Thorsmolle (Lausanne).

Graduate and Postdoctoral Advisors: Sebastian Doniach, Stanford University; Eric Siggia, Rockefeller University

Thesis Advisor and Postgraduate-Scholar Sponsor: PhD students graduated: Nikos Nicopoulos (Princeton), Li-Chung Ku (UCLA). Undergrad senior thesis students: F. Waugh, S. Jacobson (Princeton)

Synergistic Activities

Research Experience: Theoretical condensed matter physics, including nanotechnology, strongly correlated systems, quantum dynamics, time-resolved spectroscopy, polarons, colossal magnetoresistance, high temperature superconductivity, inelastic tunneling, heavy fermions, the quantum Hall effect, and linear and nonlinear transport in novel and disordered materials.