

Dr. Anna Petrova-Mayor

California State University, Chico
Department of Physics
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Current Employment

2008—present Assistant Professor of Physics, California State University, Chico.

Teaching Experience

- PHYS 450 Optics for physics and engineering majors. Two hours lecture and three hours lab per week. Text: *Optics*, 1 ed., A. Ghatak, 2009.
- PHYS 451 Lasers and their applications for physics and engineering majors. Two hours lecture and three hours lab per week. Text: *Principles of lasers*, 4 ed., O. Svelto, 2007.
- PHYS 499 Independent study for physics and engineering majors. Projects in optics and laser physics.
- PHYS 202B General physics for non-majors. Topics include electricity and magnetism, optics, atomic and nuclear physics. Three hours lecture and three hours lab per week. Text: *College Physics*, Young and Geller, 2007.
- Lab instructor Institute for Physics and Meteorology, University of Hohenheim, Germany. Supervised experiments in optics, meteorology, and electricity. (from 2002–2005)

Education

- 2002–2008 Ph.D. in Physics, University of Hohenheim, Stuttgart, Germany
Thesis: Development of an eye-safe solid-state tunable laser transmitter around 1.45 μm based on Cr^{4+} :YAG crystal for lidar applications
Advisor: Prof. Volker Wulfmeyer
- 1997–2002 Diploma in Physics (equivalent to M.S. at a U.S. University), specialization Laser Physics, University of Sofia, Sofia, Bulgaria
Thesis: Nonlinear processes for frequency conversion of laser light – second harmonic generation and optical parametric oscillator: design program. *Advisor*: Dr. Ivan Stefanov

Current Research

Development of a notch-filter suitable for high-spectral resolution lidar at 1.5 microns wavelength.

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Computer Skills

ZEMAX, Mathematica, Origin, SolidWorks, HITRAN, Adobe Illustrator, LaTeX

Professional Membership

Society of Photo-Optical Instrumentation Engineers (SPIE)

Optical Society of America (OSA)

Other Information

Languages: Fluent in Bulgarian, German, and English; reading in Russian.

Citizenship: Bulgarian and U.S.

Papers

A. Petrova-Mayor, V. Wulfmeyer, and P. Weibring, "Development of an eye-safe solid-state tunable laser transmitter in the 1.4–1.5- μm wavelength region based on Cr^{4+} :YAG crystal for lidar applications", *Appl. Opt.*, **47**, 1522-1534, (2008).

Conference Papers

A. Petrova-Mayor, V. Wulfmeyer, and P. Weibring, "An eye-safe, tunable lidar transmitter at 1.45 μm based on a Cr^{4+} :YAG laser", 23rd International Laser Radar Conference (ILRC), vol. 1, p. 201, 2006

A. Behrendt, G. Wagner, A. Petrova, M. Shiler, S. Pal, T. Schaberl, V. Wulfmeyer, "Modular lidar systems for high-resolution 4-dimensional measurements of water vapor, temperature, and aerosols", In *Proc. SPIE, Lidar Remote Sensing for Industry and Environment Monitoring V*, vol. 5653, p. 220, 2005

A. M. Valdebenito, S. Pal, G. Lammel, V. Wulfmeyer, A. Behrendt, F. Müller, A. Petrova, T. Schaberl, H. Feichter, "Close to source dynamics and evolution of aerosols emitted from a livestock farm", *ACCENT Symposium 2005*

A. Petrova, G. Wagner, V. Wulfmeyer, "Eye-safe LIDAR transmitter at 1.45 μm based on a Cr^{4+} :YAG laser", 22nd International Laser Radar Conference (ILRC), vol. 1, p. 199, 2004

A. Petrova, G. Wagner, V. Wulfmeyer, "Eye-safe LIDAR transmitter at 1.45 μm based on a Cr^{4+} :YAG laser", 3rd International Nitrogen Conference, 2004

A. Behrendt, A. Petrova, T. Schaberl, M. Shiler, G. Wagner, V. Wulfmeyer, "Lidar systems for 4-dimensional observations of atmospheric key parameters in development at University of Hohenheim", *Proceedings of the 68th Spring Meeting of the German Physical Society*, p. 176, 2004.

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Reports

V. Wulfmeyer, G. Wagner, A. Behrendt, H. Wizeman, A. Petrova, “Requirements definition for future DIAL instruments: Transmitter design, analyses and budgets”, Technical note 320, European Space Agency report, 2005

G. Lammel, V. Wulfmeyer, S. Pal, A. M. Valdebenito B., A. Behrendt, F. Müller, A. Petrova, T. Schaberl, “Aerosole aus der Nutztierhaltung” (“Aerosols in Livestock Farming”), Frderkennzeichen: ZO3K23005 and ZO3K23007, Interim Report, 2005

Poster presentations

A. Skeffington, A. Hagerman, C. Wylie, A. Petrova-Mayor, “Diagnostics and characterization of a high peak-power short pulsed Nd:YAG laser”, 6th Annual Poster Session of the College of Natural Sciences at California State University, Chico, 2010

P. Countryman, C. Gillis, C. Griffo, A. Petrova-Mayor, “State of the art measurement of the laser beam divergence”, 5th Annual Poster Session of the College of Natural Sciences at California State University, Chico, 2009

T. R. McAfee, C. F. Griffo, A. Petrova-Mayor, S. D. Mayor, “Rebuilding of the Raman-shifted Eye-safe Aerosol Lidar (REAL)”, 5th Annual Poster Session of the College of Natural Sciences at California State University, Chico, 2009

Talks

A. Petrova-Mayor, “Trends in Optics and Lasers at Chico State”, 50th Anniversary of the Physics Department at California State University, Chico, 2009