9th INTERNATIONAL CONFERENCE
on Electromagnetic and Light Scattering by Non-spherical Particles:
Theory, Measurements, and Applications
5-9 June 2006,
St. Petersburg University, St. Petersburg, Russia
`http://www.astro.spbu.ru/ELS9`

1st day, June 5, 2006, Theory

1. 8:45-9:00 Voshchinnikov: Welcoming talk and overview the conference
2. 9:00-9:20 Thomas Wriedt, Review of the Null-Field Method with Discrete Sources
3. 9:20-9:40 Jens Hellmers and Thomas Wriedt, Nullfield Method with Discrete Sources: Influence of the deposition of Discrete Sources on numerical stability (oral)
4. 9:40-10:00 M. I. Mishchenko, Accuracy of the scalar approximation in radiative transfer computations for wavelength-sized and larger particles
5. 10:00-10:20 Viktor P. Tishkovets and Klaus Jockers, Light scattering by densely packed random media. Dense media vector radiative transfer equation

   10:20-11:40 Cofee-break and poster session: posters 1-5 (P1-P5)
6. 11:40-12:00 Nikolai V. Voshchinnikov, Victor G. Farafonov, and Gorden Videen, Development of the separation of variables method for multi-layered spheroids
7. 12:00-12:20 Dmitrii B. Demin, Alexander G. Kyurkchan, and Nina I. Orlova, Solution of scattering problems of electromagnetic waves from objects coated with dielectric materials by Pattern Equation Method
8. 12:20-12:40 Vincent L. Y. Loke, Timo A. Nieminen, Agata M. Brańczyk, Norman R. Heckenberg and Halina Rubinsztein-Dunlop, Modelling optical micro-machines
9. 12:40-13:00 Karine Chamaillard Physical interpretation of statistical approach of the Stokes parameter for nonspherical particles

   13:00-14:30 Lunch
10. 14:30-14:50 V. B. Il'in and V. G. Farafonov, Separation of variables in the light scsattering theory
11. 14:50-15:10 Yevgen Grynko and Yuriy Shkuratov, Scattering by clusters of large transparent particles with different shapes
12. 15:10-15:30 Hannu Parviainen and Karri Muinonen, Ray-Tracing Light-Scattering Model for Random Rough Surfaces
13. 15:30-15:50 M. A. Yurkin and A. G. Hoekstra, An Extrapolation Technique to Increase the Accuracy of The Discrete Dipole Approximation

    15:50-17:10 Cofee-break and poster session: P6-P10

14. 17:10-17:30 Karri Muinonen, Evgenij Zubko, Yurij G. Shkuratov, and Gorden Videen, Discrete-dipole light-scattering simulations for Gaussian particles with power-law covariance

15. 17:30-17:50 M. A. Yurkin, V. P. Maltsev, and A. G. Hoekstra, Can the Discrete Dipole Approximation Simulate Scattering of Particles with Size Parameter equal to 100?

16. 17:50-18:10 D. Petrov, Yu. Shkuratov, and Gorden Videen, An optimization of the T-matrix method for size and refractive-index averaging of independently scattering particles

Experiments

17. 18:10-18:30 Edith Hadamcik, Jean-Baptiste Renard, Anny-Chantal Levasseur-Regourd, Light scattering by huge low density agglomerates with the PROGRA^2 experiment

18. 18:30-18:50 Hester Volten, Olga Muñoz, Joop Hovenier, Frans Rietmeijer, Joe Nuth and Rens Waters, Experimental light scattering by fluffy aggregates

20:30 Dinner

June 6, Applications: material science

1. 9:00-9:40 Jaroslav Holoubek, Some Applications of Light Scattering in Materials Science **(invited)**

2. 9:40-10:00 E. A. Hawes, J. T. Hastings, C. Crofcheck, and M. P. Mengüç, Near Field absorption and scattering by surface plasmon resonance of agglomerated gold particles

3. 10:00-10:20 Elena Eremina, Norbert Riefler, Thomas Wriedt and Laurent Helden, Evanescent wave scattering modeling for total internal reflection microscopy

10:20-11:40 Cofee-break and poster session: P11-P15

4. 11:40-12:00 M. Francoeur, P.G. Venkata, M. M. Aslan, and M. P. Mengüç, Preliminary sensitivity analaysis for characterization of gold nano-particles via surface wave scattering

5. 12:00-12:20 P. Albella, F. Moreno, J. M. Saiz and F. González, Far-field analysis of surfaces containing nano-contaminants on microstructures

June 6, Applications: biophysics and biomedicine

1. 12:20-13:00 Nikolai Khlebtsov, Vladimir Bogatyrev, Lev Dykman, Anna Alekseeva, Boris Khlebtsov, and Andrei Melnikov, Optical properties and biomedical applications of metal nanorods **(invited)**

13:00-14:30 Lunch

2. 14:30-14:50 J. D. Eversole, H-B. Lin, C. S. Scotto, M. Hart, and J. R. Meyer Optical Characterization of Biological Particles

3. 14:50-15:10 Andrei E. Lugovtsov, Alexander V. Priezzhev, and Sergei Yu. Nikitin, Light scattering by arbitrarily oriented optically soft spheroidal particles: calculation in geometric optics approximation

June 6, Applications: Atmosphere

1. 15:10-15:50 Alexander Kokhanovsky, Satellite remote sensing of atmospheric aerosol and clouds **(invited)**

   15:50-17:10 Cofee-break and poster session: P11-P15

2. 17:10-17:30 Anatoli G. Borovoi and Natalia V. Kustova, Statistical model of phase functions for large randomly oriented ice crystal particles

   19:30 Dinner

   20:30 Slide-show party

June 7, Excursion to Petersburg

9:00 Departure to Petersburg
10:30-14:00 Visit to Hermitage
14:00-15:00 Lunch (cafe 'Literaturnoe')
15:00-18:00 Bus excursion in the city
20:00 Return to 'Znamenka'
20:30 Dinner

June 8, Applications: astrophysics

1. 9:00-9:40 Endrik Krügel, Monte Carlo radiative transfer including PAHs **(invited)**

2. 9:40-10:00 J. Krelowski, Distribution of dust in the interstellar medium

3. 10:00-10:20 Michiel Min and Joop Hovenier, Absorption and emission by inhomogeneous aggregates of irregularly shaped constituents

   10:20-11:40 Cofee-break and poster session: P16-P20

4. 11:40-12:20 J.H. Hough, New frontiers for astronomical polarimetry **(invited)**

5. 12:20-13:00 Alex Lazarian, Grain Alignment, Polarization and Magnetic Fields **(invited)**

   13:00-14:30 Lunch

6. 14:30-14:50 D. B. Vaidya and R. Gupta, Interstellar Extinction and Polarization by Composite Dust

7. 14:50-15:30 J. W. Hovenier, M. Min, Bell-shaped Polarization Phase Curves **(invited)**

8. 15:30-15:50 Ludmilla Kolokolova, Alexander Lazarian, and Vera Rosenbush, Asymmetries in dust particles as a source of circular polarization in comets

9. 15:50-16:10 Fernando Moreno, Olga Muñoz, Antonio Molina, Rosario Vilaplana, and Daniel Guirado, Can a distribution of compact particles reproduce the observed properties of cometary dust at visible wavelengths?

   16:10-17:00 Cofee-break and poster session: P21-P25

   17:00-20:00 Excursion to Peterhof's park (fountains)

   21:00 Conference dinner

June 9, Applications: astrophysics

10. 9:00-9:20 D. Guirado, J. W. Hovenier, and F. Moreno, Circular polarization of light scattered by asymmetrical particles (oral)

11. 9:20-9:40 Nikolai Kiselev and Vera Rosenbush, Observational evidences for aligned nonspherical particles in cometary atmospheres

12. 9:40-10:00 Pavel Litvinov, Victor Tishkovets and Klaus Ziegler, Coherent backscattering effects from random media of complex particles (oral)

13. 10:00-10:20 J. Dlugach and M. I. Mishchenko, Diffuse and coherent backscattering of polarized light: polarization ratios for a discrete random half-space composed of spheroids (oral)

    10:20-11:40 Cofee-break and poster session: P26-P30

14. 11:40-12:00 Antti Penttilä, Asteroid taxonomy and polarization

15. 12:00-12:20 V. Psarev, A. Ovcharenko, Yu. Shkuratov, I. Belskaya, G. Videen, Photopolarimetry of surfaces with complicated structure at extremely small phase angles

16. 12:20-12:40 Y. Shkuratov, N. Opanasenko, E. Zubko, C. Pieters, G. Videen, A. Opanasenko, Polarimetry of the lunar surface at large phase angles

17. 12:40-13:00 Evgenij Zubko, Yuriy Shkuratov, Gorden Videen, Karri Muinonen, Effects of interference on the backscattering properties of irregularly shaped particles using DDA

    13:00-14:30 Lunch

    14:30-16:30 Round-table discussion

    14:30-03:00 Additional excursions

    Departure, Transfer to airoport/railway station

Posters

1. Vladimir V. Berdnik, Victor A. Babenko, and Valery A. Loiko, Light scattering by ensemble of correlated two-layered particles
2. Sergey Bondarenko, Yuriy Shkuratov, Gorden Videen, Hester Volten, Olga Muñoz, Photopolarimetry of particulate surfaces and particle in air at large phase angles
3. Aleksey V. Burnashov, Anatoli G. Borovoi, and Andrew Y.S. Cheng, Light scattering by preferably oriented ice crystal particles
4. E. D. Eydelman and S. V. Konyakhin, Light absorption and viscosity of stable suspension of single ultrananocrystaline made by milling
5. Frédéric Gruy and Sandra Jacquier, Approximation of the scattering cross section for aggregated spherical particles
6. V. B. Il'in and V. G. Farafonov, Electromagnetic field expansions in terms of spheroidal functions
7. V. B. Il'in and M. S. Prokopjeveva Polarization of starlight by inhomogeneous dust grains
8. Vladimir V. Karjukin, Problem of the simulation of multiple light scattering by nonspherical particles
9. Sen Kikuchi, The gas to dust ratios in cometary comae deduced from multichannel polarimetry
10. Moshe Kleiman, Ioseph Gurwich, and Nir Shiloah, Enhanced extinction of electromagnetic radiation by metal coated fibers
11. A. N. Korolevich, E.K. Naumenko, N. S. Dubin, S. I. Vecherinski, A. Bernjak, M. Belsley, and A. Stefanovska, Backreflectance from the blood plexus in the skin under the low-power laser heating
12. Natalia V. Kustova, Anatoli G. Borovoi, and Maxim N. Gavrilov, Small-angle scattering by ice crystals
13. Alexander G. Kyurkchan and Nadejda I. Smirnova, Solution of wave diffraction problems on impedance scatterers by method of continued boundary conditions
14. Jérémie Lasue, Anny-Chantal Levasseur-Regourd, Jean-Baptiste Renard and Edith Hadamcik, Scattering by coated spheres: experimental results and numerical simulations
15. Valery A. Loiko, Gennady I. Ruban, Olga A. Gritsai, Svetlana M. Kosmacheva, and Natalia V. Goncharova, Elaboration of optical model of lymphocytes as applied to scanning flow cytometry
16. S. Malynych and G. Chumanov, Extinction spectra of quasi-spherical silver sub-micron particles

17. A. C. Marra, A. Blanco, A. Dinoi, S. Fonti, G. A. Marzo, V. Orofino, and R. Politi, Extinction spectra of particulate materials: the role of tiny dust covering larger grains

18. O. Merchiers, F. Moreno, F. González and G. Videen, Influence of the optical constants ε and μ on the scattering patterns of two interacting dipoles

19. Eugene F. Mikhailov, Sergey S. Vlasenko, Michael Yu. Igonin, Structural and optical properties of hydrophobic and hydrophilic soot aggregates in water saturated air

20. F. Moreno, F. González and José M. Saiz, Spectral shift in metal particle resonances induced by near field interaction with dielectric surfaces

21. Karri Muinonen, Inversion of small-particle silhouettes for Gaussian-sphere parameters

22. Leonid E. Paramonov and Vladimir A. Schmidt, Estimation of the orientation structure of axially symmetric particles from backscattering data

23. Antti Penttilä, Evgenij Zubko, Kari Lumme, Karri Muinonen, Maxim Yurkin, and Alfons Hoekstra, Comparison between discrete dipole and exact techniques

24. Vera Rosenbush, Michael Mishchenko, and Nikolai Kiselev, Evidences for coherent backscattering in high-albedo atmosphereless Solar System bodies

25. Sergey N. Savenkov, Konstantin E. Yushtin, Ranjan S. Muttiah, Sergey N. Volchkov, Polarization memory in passing the polarized light through inhomogeneous birefringent media

26. D. G. Stankevich, L. G. Istomina, Yu. G. Shkuratov, and G. Videen, Monte-Carlo modeling of the coherent backscattering effect in a random medium consisting of large non-transparent spheres

27. Jani Tyynelä and Karri Muinonen, Inverse methods for retrieving surface topography from visual images