

Refereed journal articles (A1)

- [1] T. Väisänen, J. Markkanen, A. Penttilä, and K. Muinonen. “Radiative transfer with reciprocal transactions: Numerical method and its implementation”. In: *PLoS ONE* 14.1 (2019), pp. 1–24.
- [2] J. Markkanen, J. Agarwal, T. Väisänen, A. Penttilä, and K. Muinonen. “Interpretation of the Phase Functions Measured by the OSIRIS Instrument for Comet 67P/ChuryumovGerasimenko”. In: *Astrophysical Journal Letters* 868.1 (2018), p. L16.
- [3] J. Martikainen, A. Penttilä, M. Gritsevich, G. Videen, and K. Muinonen. “Absolute spectral modeling of asteroid (4) Vesta”. In: *Monthly Notices of the Royal Astronomical Society* 483.2 (2018), pp. 1952–1956.
- [4] E. Hesse, L. Taylor, C.T. Collier, C.T. Penttilä, Nousiainen, and Z. Ulanowski. “Discussion of a physical optics method and its application to absorbing smooth and slightly rough hexagonal prisms”. In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 218 (2018), pp. 54–67.
- [5] J. Markkanen, T. Väisänen, A. Penttilä, and K. Muinonen. “Scattering and absorption in dense discrete random media of irregular particles”. In: *Optics Letters* 43.12 (2018), pp. 2925–2928.
- [6] H. Lindqvist, J. Martikainen, J. Rabinä, A. Penttilä, and K. Muinonen. “Ray optics in absorbing media with application to ice crystals at near-infrared wavelengths”. In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 217 (2018), pp. 329–337.
- [7] J. Torppa, M. Granvik, A. Penttilä, et al. “Added-value interfaces to asteroid photometric and spectroscopic data in the Gaia database”. In: *Advances in Space Research* 62.2 (2018), pp. 464–476.
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- [10] T. Kohout, A. Näsilä, T. Tikka, et al. “Feasibility of asteroid exploration using CubeSats—ASPECT case study”. In: *Advances in Space Research* 62.8 (2018), pp. 2239–2244.
- [11] S. Oja, P. Komulainen, A. Penttilä, J. Nystedt, and M. Korhonen. “Automated image analysis detects aging in clinical-grade mesenchymal stromal cell cultures”. In: *Stem Cell Research & Therapy* 9.1 (2018), p. 6.
- [12] J. Escobar-Cerezo, A. Penttilä, T. Kohout, Muñoz, F. Moreno, and K. Muinonen. “Simulations of Effects of Nanophase Iron Space Weather Products on Lunar Regolith Reflectance Spectra”. In: *Astrophysical Journal* 853.1 (2018), p. 71.

- [13] A. Penttilä, J. Martikainen, M. Gritsevich, and K. Muinonen. "Laboratory spectroscopy of meteorite samples at UV-vis-NIR wavelengths: Analysis and discrimination by principal components analysis". In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 206 (2018), pp. 189–197.
- [14] G. Maconi, A. Penttilä, I. Kassamakov, M. Gritsevich, P. Helander, T. Puranen, A. Salmi, E. Hægström, and K. Muinonen. "Non-destructive controlled single-particle light scattering measurement". In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 204 (2018), pp. 159–164.
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- [19] A. Penttilä, V.G. Shevchenko, O. Wilkman, and K. Muinonen. " H, G_1, G_2 photometric phase function extended to low-accuracy data". In: *Planetary and Space Science* 123 (2016), pp. 117–125.
- [20] V.G. Shevchenko, I.N. Belskaya, K. Muinonen, et al. "Asteroid observations at small phase angles. IV. Average parameters for the new H, G_1, G_2 magnitude system". In: *Planetary and Space Science* 123 (2016), pp. 101–116.
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- [23] E. Bowell, D.A. Oszkiewicz, L.H. Wasserman, K. Muinonen, A. Penttilä, and D.E. Trilling. "Asteroid spin-axis longitudes from the Lowell Observatory database". In: *Meteoritics & Planetary Science* 49 (2014), pp. 95–102.

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- [25] D.A. Oszkiewicz, T. Kwiatkowski, T. Tomov, M. Birlan, S. Geier, A. Penttilä, and M. Polińska. “Selecting asteroids for a targeted spectroscopic survey”. In: *Astronomy & Astrophysics* 572 (2014), A29.
- [26] H. Pentikäinen, A. Penttilä, K. Muinonen, and J. Peltoniemi. “Spectroscopic investigations of meteorites”. In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 146 (2014), pp. 391–401.
- [27] J. Rabinä, S. Mönkölä, T. Rossi, A. Penttilä, and K. Muinonen. “Comparison of discrete exterior calculus and discrete-dipole approximation for electromagnetic scattering”. In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 146 (2014), pp. 417–423.
- [28] A. Virkki, K. Muinonen, and A. Penttilä. “Radar albedos and circular-polarization ratios for realistic inhomogeneous media using the discrete-dipole approximation”. In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 146 (2014), pp. 480–491.
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- [31] A. Penttilä. “Quasi-specular reflection from particulate media”. In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 131 (2013), pp. 130–137.
- [32] A. Penttilä, J. Sievänen, K. Torvinen, K. Ojanperä, and J.A. Ketoja. “Filler-nanocellulose substrate for printed electronics: experiments and model approach to structure and conductivity”. In: *Cellulose* 20.3 (2013), pp. 1413–1424.
- [33] A. Virkki, K. Muinonen, and A. Penttilä. “Circular polarization of spherical-particle aggregates at backscattering”. In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 126 (2013), pp. 150–159.
- [34] K. Muinonen, M.I. Mishchenko, J.M. Dlugach, E. Zubko, A. Penttilä, and G. Videen. “Coherent backscattering verified numerically for a finite volume of spherical particles”. In: *Astrophysical Journal* 760.2 (2012), pp. 118–128.
- [35] D.A. Oszkiewicz, E. Bowell, L.H. Wasserman, K. Muinonen, A. Penttilä, T. Pie Niluoma, D.E. Trilling, and C.A. Thomas. “Asteroid taxonomic signatures from photometric phase curves”. In: *Icarus* 219.1 (2012), pp. 283–296.

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- [39] A. Penttilä and K. Lumme. "Optimal cubature on the sphere and other orientation averaging schemes". In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 112.11 (2011), pp. 1741–1746.
- [40] K. Muinonen, I.N. Belskaya, A. Cellino, M. Delbò, A.-C. Levasseur-Regourd, A. Penttilä, and E.F. Tedesco. "A three-parameter magnitude phase function for asteroids". In: *Icarus* 209.2 (2010), pp. 542–555.
- [41] M. Juuti, H. Tuononen, A. Penttilä, K. Myller, K. Lumme, and K.-E. Peiponen. "Spectral properties and surface uniformity of black glass gloss references". In: *Optical Engineering* 48.3 (2009).
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- [45] A. Penttilä, E. Zubko, K. Lumme, K. Muinonen, M.A. Yurkin, B. Draine, J. Rahola, A.G. Hoekstra, and Y. Shkuratov. "Comparison between discrete dipole and exact techniques". In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 106 (2007), pp. 417–436.
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- [47] A. Penttilä, K. Lumme, E. Hadamcik, and A.-C. Levasseur-Regourd. "Statistical analysis of asteroidal and cometary polarization phase curves". In: *Astronomy & Astrophysics* 432 (2005), pp. 1081–1090.

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Articles in conference publication (refereed) (A4)

- [1] I. Kassamakov, G. Maconi, A. Penttilä, M. Gritsevich, P. Helander, T. Puranen, A. Salmi, E. Hægström, and K. Muinonen. "Light scattering by ultrasonically-controlled small particles: system design, calibration, and measurement results". In: *Proc. SPIE 10539, Photonic Instrumentation Engineering V*. 2018.
- [2] A. Penttilä, G. Maconi, I. Kassamakov, M. Gritsevich, P. Helander, T. Puranen, E. Hægström, and K. Muinonen. "Experimental light scattering by small particles: first results with a novel Mueller matrix scatterometer". In: *Proc. SPIE 10330, Modeling Aspects in Optical Metrology VI*. 2017.
- [3] M. Gritsevich, G. Maconi, A. Nolvi, I. Kassamakov, A. Penttilä, K. Muinonen, and E. Hægström. "Super-resolution photonic nanojet interferometry: photonic nanojet interaction with a polymer sample". In: *Proc. SPIE 10329, Optical Measurement Systems for Industrial Inspection X*. 2017.
- [4] G. Maconi, I. Kassamakov, A. Penttilä, M. Gritsevich, E. Hægström, and K. Muinonen. "Experimental light scattering by small particles: system design and calibration". In: *Proc. SPIE 10329, Optical Measurement Systems for Industrial Inspection X*. 2017.
- [5] K. Muinonen, J. Tyynelä, E. Zubko, A. Penttilä, T. Pieniluoma, and G. Videen. "Polarization of light backscattered by wavelength-scale particles". In: *Accademia Peloritana dei Pericolanti. Classe di Scienze Fisiche Matematiche e Naturali* 89.Suppl. 1 (2011).
- [6] D. Oszkiewicz, K. Muinonen, E. Bowell, D. Trilling, L. Wasserman, A. Penttilä, and T. Pieniluoma. "Asteroid phase curves from Lowell Observatory photometric database". In: *Accademia Peloritana dei Pericolanti. Classe di Scienze Fisiche Matematiche e Naturali* 89.Suppl. 1 (2011).
- [7] A. Penttilä and K. Lumme. "Specular gloss simulations of media with small-scale roughness". In: *Proceedings of the 12th Conference on Electromagnetic and Light Scattering*. Ed. by K. Muinonen, A. Penttilä, H. Lindqvist, T. Nousiainen, and G. Videen. Helsinki, Finland, 2010, pp. 230–233.

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- [10] A. Penttilä and K. Lumme. "Coherent backscattering effects with Discrete Dipole Approximation method". In: *Proceedings of the 10th Conference on Electromagnetic and Light Scattering by Nonspherical Particles: Theory, Measurements and Applications*. Ed. by G. Videen, M. Mishchenko, M.P. Mengüç, and N. Zakharova. Bodrum, Turkey, 2007, pp. 157–160.
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Unrefereed article in conference proceedings (B3)

- [1] K. Muinonen, J. Markkanen, A. Penttilä, A. Virkki, and D. Mackowski. "Multiple scattering by dense random media: Volume-element extinction." In: *URSI Electromagnetic Theory Symposium EMTS'16*. Espoo, Finland, 2016, pp. 751–754.
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Edited books, compilations, conference proceedings or special issues of journal (C2)

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- [2] K. Muinonen, M. Granvik, A. Penttilä, and M. Gritsevich, eds. *SI:ACM Interrelated (Part I)*. Vol. 118. Planetary and Space Science. Elsevier Science, 2015.
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- [4] K. Muinonen, G. Videen, T. Nousiainen, E. Zubko, and A. Penttilä, eds. *Electromagnetic and Light Scattering by Nonspherical Particles XII*. Vol. 112. Journal of Quantitative Spectroscopy & Radiative Transfer. Elsevier Science, 2011.
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Master's theses, diploma works, upper higher vocational diplomas (G2)

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Licentiate Theses (G3)

- [1] A. Penttilä. "Statistical analysis of the polarization of asteroids and comets". Licentiate thesis. University of Helsinki, Finland, 2009. URL: <http://hdl.handle.net/10138/16488>.

Doctoral Theses, articles (G5)

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