

Refereed journal articles (A1)

- [1] 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).
- [2] 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).
- [3] E. Hesse, C.T. Collier, A. Penttilä, T. Nousiainen, Z. Ulanowski, and P.H. Kaye. “Modelling light scattering by absorbing smooth and slightly rough faceted particles”. In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 157 (2015), pp. 71–80.
- [4] K. Muinonen, A. Penttilä, and G. Videen. “Multiple scattering of light in particulate planetary media”. In: *Polarimetry of Stars and Planetary Systems*. Ed. by L. Kolokolova, J. Hough, and A.-C. Levasseur-Regourd. Cambridge University Press, 2015, pp. 114–129.
- [5] 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.
- [6] T. Kohout, M. Gritsevich, V.I. Grokhovsky, G.A. Yakovlev, J. Haloda, P. Halodova, R.M. Michallik, A. Penttilä, and K. Muinonen. “Mineralogy, reflectance spectra, and physical properties of the Chelyabinsk LL5 chondrite — Insight into shock-induced changes in asteroid regoliths”. In: *Icarus* 228 (2014), pp. 78–85.
- [7] 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.
- [8] 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.
- [9] 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.
- [10] 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.

- [11] K. Haimila, A. Penttilä, A. Arvola, M.-K. Auvinen, and M. Korhonen. "Analysis of the adequate size of a cord blood bank and comparison of HLA haplotype distributions between four populations". In: *Human Immunology* 74.2 (2013), pp. 189–195.
- [12] A. Penttilä. "Quasi-specular reflection from particulate media". In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 131 (2013), pp. 130–137.
- [13] 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.
- [14] 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.
- [15] 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.
- [16] D.A. Oszkiewicz, E. Bowell, L.H. Wasserman, K. Muinonen, A. Penttilä, T. Pieniluoma, D.E. Trilling, and C.A. Thomas. "Asteroid taxonomic signatures from photometric phase curves". In: *Icarus* 219.1 (2012), pp. 283–296.
- [17] K. Lumme and A. Penttilä. "Model of light scattering by dust particles in the solar system: Applications to cometary comae and planetary regoliths". In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 112.11 (2011), pp. 1658–1670.
- [18] K. Muinonen, J. Tyynelä, E. Zubko, H. Lindqvist, A. Penttilä, and G. Videen. "Polarization of light backscattered by small particles". In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 112.13 (2011), pp. 2193–2212.
- [19] D. Oszkiewicz, K. Muinonen, E. Bowell, D. Trilling, A. Penttilä, T. Pieniluoma, L. Wasserman, and M.-T. Enga. "Online multi-parameter phase-curve fitting and application to a large corpus of asteroid photometric data". In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 112.11 (2011), pp. 1919–1929.
- [20] 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.
- [21] 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.
- [22] 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).

- [23] K. Muinonen, A. Penttilä, A. Cellino, I.N. Belskaya, M. Delbò, A-C. Levasseur-Regourd, and E.F. Tedesco. "Asteroid photometric and polarimetric phase curves: Joint linear-exponential modeling". In: *Meteoritics & Planetary Science* 44.12 (2009), pp. 1937–1946.
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- [25] T. Manninen, A. Penttilä, and K. Lumme. "C-band scattering simulation of a Scots pine shoot". In: *Waves in Random and Complex Media* 17.1 (2007), pp. 85–98.
- [26] 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.
- [27] A. Penttilä, K. Lumme, and L. Kuutti. "Light-scattering efficiency of starch acetate pigments as a function of size and packing density". In: *Applied Optics* 45 (2006), pp. 3501–3509.
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- [29] A. Penttilä and K. Lumme. "The effect of particle shape on scattering - A study with a collection of axisymmetric particles and sphere clusters". In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 89 (2004), pp. 303–310.
- [30] A. Penttilä, K. Lumme, J-C. Worms, J-B. Renard, and A-C. Levasseur-Regourd. "Theoretical analysis of the particle properties and polarization measurements made in microgravity". In: *Journal of Quantitative Spectroscopy & Radiative Transfer* 79–80 (2003), pp. 1043–1050.

Articles in conference publication (refereed) (A4)

- [1] 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).
- [2] 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).

- [3] 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.
- [4] A. Penttilä and K. Lumme. "Cubature orientation-averaging scheme". 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. 234–237.
- [5] A. Cellino, I. Belskaya, M. M. Delbò, A.-C. Levasseur-Regourd, K. Muinonen, A. Penttilä, and E.F. Tedesco. "A new three-parameter H , G_1 , G_2 magnitude phase function for asteroids". 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. 22–25.
- [6] 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.
- [7] A. Penttilä. "Asteroid taxonomy and polarization". In: *Proceedings of the 9th Conference on Electromagnetic and Light Scattering by Nonspherical Particles: Theory, Measurements and Applications*. Ed. by N. Voshchinnikov. St. Petersburg, Russia, 2006, pp. 223–226.
- [8] A. Penttilä, E. Zubko, K. Lumme, K. Muinonen, M. Yurkin, Yu. Shkuratov, and A. Hoekstra. "Comparison between discrete dipole and exact techniques". In: *Proceedings of the 9th Conference on Electromagnetic and Light Scattering by Nonspherical Particles: Theory, Measurements and Applications*. Ed. by N. Voshchinnikov. St. Petersburg, Russia, 2006, pp. 227–230.
- [9] A. Penttilä and K. Lumme. "Numerical solution to the first-order light scattering by rough and particulate surfaces". In: *Proceedings of the 8th Conference on Electromagnetic and Light Scattering by Nonspherical Particles: Theory, Measurements and Applications*. Ed. by F. Moreno, J.J. López-Moreno, O. Muñoz, and A. Molina. Salobreña, Spain, 2005, pp. 265–268.
- [10] K. Lumme and A. Penttilä. "Coherent backscattering by aggregates of spherical constituents". In: *Proceedings of the 8th Conference on Electromagnetic and Light Scattering by Nonspherical Particles: Theory, Measurements and Applications*. Ed. by F. Moreno, J.J. López-Moreno, O. Muñoz, and A. Molina. Salobreña, Spain, 2005, pp. 203–206.

- [11] A. Penttilä and K. Lumme. "The effect of particle shape on scattering - A study with a collection of axisymmetric particles and sphere clusters". In: *Proceedings of the 7th Conference on Electromagnetic and Light Scattering by Nonspherical Particles: Theory, Measurements and Applications*. Ed. by T. Wriedt. Bremen, Germany, 2003, pp. 289–292.
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- [13] K. Lumme and A. Penttilä. "Light scattering by cometary dust: A review of the codes, constraints and results". In: *Proceedings of the 6th Conference on Electromagnetic and Light Scattering by Nonspherical Particles: Theory, Measurements and Applications*. Ed. by B. Gustafson, L. Kolokolova, and G. Videen. Gainesville, USA, 2002, pp. 195–198.

Edited books, compilations, conference proceedings or special issues of journal (C2)

- [1] K. Muinonen, M. Granvik, A. Penttilä, and M. Gritsevich, eds. *SI:ACM Interrelated (Part II)*. Vol. 123. Planetary and Space Science. Elsevier Science, 2016.
- [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.
- [3] 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.
- [4] K. Muinonen, A. Penttilä, H. Lindqvist, T.P. Nousiainen, and G. Videen, eds. *Electromagnetic and Light Scattering XII: Conference Proceedings*. Helsinki, Finland: Helsinki University Press, 2010.

Master's theses, diploma works, upper higher vocational diplomas (G2)

- [1] A. Penttilä. "Partikkelien muodon mallintaminen niiden 2D-satunnaisprojektioista". In Finnish. MA thesis. University of Helsinki, Finland, 2002. URL: <http://urn.fi/URN:NBN:fi-fe20031071>.

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)

- [1] A. Penttilä. "Light scattering in random media with wavelength-scale structures: astronomical and industrial applications". Doctoral thesis. University of Helsinki, Finland, 2011. URL: <http://urn.fi/URN:ISBN:978-952-10-7073-0>.