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T-matrix theory of electromagnetic scattering by particles and its applications: a comprehensive reference database

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Abstract

The *T*-matrix method is one of the most powerful and widely used theoretical techniques for the computation of electromagnetic scattering by single and composite particles, discrete random media, and particles in the vicinity of an interface separating two half-spaces with different refractive indices. This paper presents a comprehensive database of *T*-matrix publications since the inception of the technique in 1965 through early 2004.

Keywords: Electromagnetic scattering; *T*-matrix method

1. Introduction

Since its formulation in 1965, the *T*-matrix method has become one of the most powerful, versatile, and popular theoretical techniques for treating electromagnetic, acoustic, and elastodynamic scattering by particles and surfaces. The most recent attempt to outline the vast realm of this technique and its practical applications by compiling a comprehensive publication database dates back to 1988 (Varadan et al., 1988); that list included 151 references. Although to attempt a similar compilation now would be very

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important, it is next to impossible. To make the task both useful and practicable, one has to be selective and to adhere firmly to well defined and meaningful guidelines. The three most important restrictions that we have adopted for this database are the following:

- With a few important exceptions, the database includes only publications dealing with electromagnetic scattering.
- As a rule, publications on scattering by isolated infinite cylinders and systems of parallel infinite cylinders in unbounded space are excluded.
- The database includes only references to books, peer-reviewed book chapters, and peer-reviewed journal papers.

Even with these restrictions, the database contains more than 700 references.

A critical issue that we faced at the outset of this project was to agree on a definition of the *T*-matrix method. The concept of a *T* matrix has evolved quite dramatically since it was first introduced by P.C. Waterman in 1965. From being a minor bi-product of the extended boundary condition method, it has become the centerpiece of a vast domain of wave scattering science. We hope that we will not step on too many toes by suggesting the following definition:

> In the *T*-matrix method, the incident and scattered electric fields are expanded in series of suitable vector spherical wave functions, and the relation between the columns of the respective expansion coefficients is established by means of a transition matrix (or *T* matrix). This concept can be applied to the entire scatterer as well as to separate parts of a composite scatterer.

It is clear that in the framework of this definition, the classical Lorenz–Mie theory for homogeneous isotropic spheres and its generalizations for inhomogeneous spherically symmetric particles become a particular case of the *T*-matrix approach. Therefore, another inescapable restriction that we had to impose on this database was to exclude all references dealing with individual spherically symmetric scatterers. We hope that the reference list of the recent monograph by Babenko et al. (2003) will be at least a partial remedy for this deficiency.

In addition to compiling a unified masterlist of *T*-matrix publications on electromagnetic scattering by particles, we have tried to make the database more useful by classifying the various references into a set of narrower subject categories (Sections 2 and 3). Depending on the specific content of a publication, it may appear in one or several subject categories. The choice of the subject categories, especially categories such as *Seminal publications*, and assigning a publication to a category are somewhat subjective and are open to criticism. We feel, however, that the pros of this endeavor in terms of its utility to various categories of customers far outweigh its potential cons.

What we have not done in this paper is to assess the validity and importance of the results described in the specific publications included in the database. It is not inconceivable that some of the publications contain wrong results or duplicate results obtained in earlier publications. We believe that a critical assessment of the *T*-matrix publications should be the subject of a book or a review and is beyond the scope of this paper. Therefore, the reader should keep in mind that the inclusion of a publication in this database does not constitute any formal endorsement or quality certification on our part.

We realize that even with the restrictions adopted, it will be impossible to publish in a research journal another comprehensive database like this one even in a few years from now (see Fig. 1). However, we plan to maintain an updated version of this database on the web site http://www.giss.nasa.gov/∼crmim

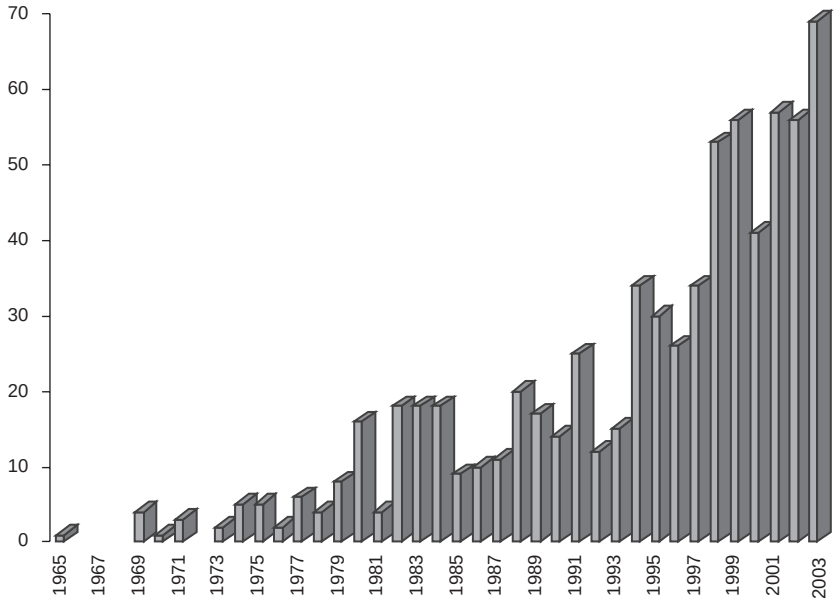

Fig. 1. Annual frequency distribution of the *T*-matrix publications.

and ask the readers to help us in this endeavor by sending corrections and missing references to existing and future publications on the *T*-matrix method and its various applications.

2. Particles in infinite homogeneous space

2.1. Seminal publications

This subsection references the publications in which the *T*-matrix method was originally developed as well as those in which a major generalization or improvement of the *T*-matrix method was proposed.

Bruning and Lo (1971a)
Khlebtsov (1992)
Lakhtakia et al. (1983)
Mackowski and Mishchenko (1996)
Mishchenko (1991a)
Peterson and Ström (1973)
Peterson and Ström (1974)
Rozenberg (1974)
Schulz et al. (1999a)
Tsang and Kong (1980)
Varadan and Varadan (1980a)
Varadan et al. (1979)
Waterman (1965)
Waterman (1969)
Waterman (1971)

2.2. Books

Barber and Hill (1990)
Borghese et al. (2003)
Chew (1995)
Doicu et al. (2000c)
Mishchenko et al. (2002)
Rozenberg (1974)
Tsang and Kong (2001)
Tsang et al. (1985)
Tsang et al. (2000)
Tsang et al. (2001)
Varadan and Varadan (1980b)

2.3. Reviews

Barber (1980)
Fuller and Mackowski (2000)
Mishchenko et al. (1996b)
Mishchenko et al. (2000b)
Ström and Zheng (1989)
Waterman (1980)

2.4. Extended boundary condition method and its modifications and generalizations

Al-Badwaihy and Yen (1975)
Babenko (1997)
Babenko (1999)
Barber and Yeh (1975)
Bates and Wall (1977)
Boström (1982)
Bringi and Seliga (1977b)
Doicu (1999)
Doicu (2002)
Doicu and Wriedt (1997a)
Doicu and Wriedt (1997b)
Doicu and Wriedt (1997c)
Doicu and Wriedt (1999)
Doicu and Wriedt (2001b)
Doicu and Wriedt (2001c)
Doicu and Wriedt (2001d)
Doicu et al. (1999b)
Eremina and Wriedt (2003)
Hizal (1980)
Iskander and Lakhtakia (1984)
Iskander et al. (1982)
Iskander et al. (1983)
Iskander et al. (1989b)
Lakhtakia et al. (1983)
Lakhtakia et al. (1984b)
Morita (1979)
Peterson and Ström (1974)
Ström (1975)
Ström (1991a)
Ström (1991b)
Ström and Zheng (1987)
Ström and Zheng (1988)
Wang et al. (1994)
Waterman (1965)
Waterman (1969)
Waterman (1971)
Waterman (1979)
Wriedt and Doicu (1997)
Wriedt and Doicu (1998b)
Wriedt and Doicu (1998c)
Zheng and Ström (1989)

2.5. T-matrix theory and computations for anisotropic and chiral scatterers

Doicu (2003)
Kiselev et al. (2002)
Lakhtakia (1991)
Lakhtakia et al. (1985)
Liu et al. (2000b)
Sharma and Balakrishnan (1998)

2.6. Superposition T-matrix method and its modifications, including related mathematical tools

Auger and Stout (2003)
Auger et al. (2001)
Borghese et al. (1979)
Borghese et al. (1980)
Borghese et al. (1994)
Boström et al. (1991)
Bruning and Lo (1971a)
Bruning and Lo (1971b)
Chew (1990)
Chew et al. (1990)
Cruzan (1962)
Chew and Wang (1993)
Danos and Maximon (1965)
Fikioris and Uzunoglu (1979)
Fuller (1994)
Fuller and Kattawar (1988a)
Fuller and Kattawar (1988b)
Gérardy and Ausloos (1982)
Hamid et al. (1990b)
Mackowski (1991)
Mackowski (1994)
Mackowski (2001)
Mackowski and Mishchenko (1996)
Mishchenko and Mackowski (1994)
Miyazaki and Jimba (2000)
Ngo et al. (1996)
Ngo et al. (1997)
Peterson (1977)
Peterson and Ström (1973)
Rozenberg (1974)
Saija et al. (2003b)
Siqueira and Sarabandi (2000)
Stein (1961)
Stout et al. (2001)
Stout et al. (2002a)
Ström (1974)
Tzeng and Fung (1994)
Videen and Bickel (1991)
Videen and Ngo (1998)
Videen et al. (1995)
Videen et al. (1996)
Wang and Chew (1993)
Wittmann (1988)
Xu (1996a)
Xu (1996b)
Xu (1997b)
Xu (1998b)

2.7. T-matrix theory of electromagnetic scattering by infinite periodic arrays of particles

Modinos (1987)
Peterson (1977)
Varadan (1980)
Waterman and Pedersen (1986)

2.8. T-matrix theory and computations of electromagnetic scattering by discrete random media

Bringi et al. (1982a)
Bringi et al. (1982b)
Bringi et al. (1983)
Chew (1989)
Chen et al. (2003)
Chew et al. (1990)
Doicu and Wriedt (2001a)
Guo et al. (2001)
Lu et al. (1995)
Ma et al. (1988)
Neo et al. (1999)
Siqueira and Sarabandi (2000)
Stefanou and Modinos (1993)
Tishkovets (2002)
Tishkovets and Mishchenko (2004)
Tishkovets et al. (2002)
Tishkovets et al. (2004a)
Tsang (1984)
Tsang and Kong (1982)
Tsang and Kong (1983)

Tsang et al. (1992)
Varadan (1980)
Varadan and Varadan (1980a)
Varadan et al. (1979)
Varadan et al. (1983)
Varadan et al. (1984)
Varadan et al. (1985a)
Varadan et al. (1985b)
Varadan et al. (1987)
West et al. (1994)

2.9. Relation of the T-matrix method to other theoretical approaches

Agarwal (1976)
Bates (1969)
Bates (1975)
Bolomey and Wirgin (1974)
Burrows (1969)
Doicu (1999)
Doicu and Wriedt (1999)
Doicu et al. (1999b)
Doicu et al. (2000b)
Eremin (1995)
Eremin (1998)
Farafonov (2002)
Farafonov et al. (2003)
Hill et al. (1997)
Kahnert et al. (2003)
Kleinman et al. (1984)
Lewin (1970)
Lu and Chew (1995)
Mackowski (2002)
Martin (2003)
Millar (1969)
Morgan et al. (1984)
Nieminen et al. (2003a)
Rother (1998)
Rother et al. (2002)
Schmidt et al. (1998)
Schulz et al. (1998a)
Videen et al. (1998)
Wriedt and Doicu (1997)
Zurk et al. (1995)
Zurk et al. (1996)

2.10. Symmetry properties of the T matrix and analytical orientation averaging approaches

Battaglia et al. (2001b)
Borghese et al. (1984b)
Borghese et al. (2001)
Fucile et al. (1993)
Fucile et al. (1995)
Havemann and Baran (2001)
Kahnert et al. (2001a)
Khlebtsov (1991)
Khlebtsov (1992)
Mackowski (1994)
Mackowski and Mishchenko (1996)
Mishchenko (1989)
Mishchenko (1990b)
Mishchenko (1990c)
Mishchenko (1990d)
Mishchenko (1991a)
Mishchenko (1991b)
Mishchenko (1991c)
Mishchenko (1991e)
Mishchenko (1992a)
Mishchenko and Mackowski (1994)
Paramonov (1994c)
Paramonov (1994e)
Paramonov (1995a)
Paramonov (1995b)
Paramonov and Lopatin (1990)
Schulz et al. (1999a)
Sindoni et al. (1984)
Skaropoulos (2003)
Skaropoulos and Russchenberg (2002)
Tsang et al. (1984)
Varadan (1980)
Varadan and Varadan (1980a)
Varadan et al. (1984)
Wielaard et al. (1997)

2.11. Convergence of various implementations of the T-matrix method

Aydin and Hizal (1979)
Bates and Wong (1974)
Dallas (2000)
Ding and Xu (1999)
Doicu et al. (2000b)
Hizal (1980)
Iskander et al. (1983)
Kahnert et al. (2001b)
Khlebtsov et al. (2000)
Kristensson and Waterman (1982)
Kristensson et al. (1983)
Lakhtakia et al. (1984a)
Lapalme and Patitsas (1993a)
Mishchenko (1993)
Mishchenko and Travis (1994a)
Mishchenko and Travis (1998)
Mishchenko et al. (1996a)
Ramm (1982)
Ramm (2002)
Siqueira and Sarabandi (2000)
Ström and Zheng (1987)
Wall (1980)
Waterman (1980)
Waterman (1983)
Wiscombe and Mugnai (1986)

2.12. Benchmark T-matrix results

By benchmark numerical results we understand numbers with at least 3 correct first significant decimals. The accuracy of the numbers must be established by either comparisons with results generated by an independent method or by implementing a reliable internal convergence test.

Hovenier et al. (1996)
Kuik et al. (1992)
Mishchenko (1991a)
Mishchenko (1991d)
Mishchenko (2000)
Mishchenko and Mackowski (1996)
Mishchenko et al. (1996a)
Voshchinnikov et al. (2000)
Wielaard et al. (1997)

2.13. T-matrix calculations for homogeneous spheroids

Abdulkin and Paramonov (2001)
Alpers et al. (2001)
Astafieva and Babenko (1999)
Aydin and Daisley (2002)
Aydin and Lure (1991)
Aydin and Walsh (1999)
Aydin and Zhao (1990)
Aydin et al. (1984)
Aydin et al. (1989)
Aydin et al. (1998)
Babenko and Petrov (2002)
Balzer et al. (1998)
Bantges et al. (1999)
Baran et al. (1998)
Barber (1977a)
Barber (1977b)
Barber (1978)
Barber and Hill (1988)
Barber and Massoudi (1982)
Barber and Wang (1978)
Barber and Yeh (1975)
Barber et al. (1981)
Barber et al. (1982)
Barber et al. (1983a)
Barber et al. (1983b)
Barksdale and Bostian (1988)
Battaglia et al. (2001a)
Battaglia et al. (2001b)

Bayoudh et al. (2003)
Bazhan et al. (2002)
Bonev et al. (2002)
Borrmann et al. (1996)
Borrmann et al. (2000)
Bringi and Seliga (1977a)
Bringi and Seliga (1980)
Bringi et al. (1998)
Brogniez et al. (2003)
Brooks et al. (2004)
Carey et al. (2000)
Chang et al. (2002)
Cline et al. (1986)
Crosta et al. (2003)
Czekala (1998)
Czekala and Simmer (1998)
Czekala and Simmer (2002)
Czekala et al. (1999)
Czekala et al. (2001a)
Czekala et al. (2001b)
Dlugach and Mishchenko (2004)
Dlugach and Petrova (2003)
Dlugach et al. (2002a)
Dlugach et al. (2002b)
Doicu (2002)
Doicu and Wriedt (1997a)
Doicu and Wriedt (1997b)
Doicu and Wriedt (1997c)
Doicu and Wriedt (1999)
Doicu et al. (1997)
Doicu et al. (1998)
Doicu et al. (1999b)
Doicu et al. (2000b)
Dubovik et al. (2002)
Durden (2003)
Enejder et al. (2003)
Flesia et al. (1994)
Fueglistaler et al. (2003)
Geller et al. (1985)
Glatter and Hofer (1988)
Gledhill and McCall (2000)
Gustafson et al. (2001)
Haferman (2000)
Haferman et al. (1997)
Heintzenberg et al. (2002)
Hill and Benner (1988)
Hill et al. (1984)
Hızal (1980)
Ho and Allen (1994)
Hofer and Glatter (1989)
Holt (1982)
Hogan et al. (2000)
Höpfner et al. (2001)
Hovenier et al. (1996)
Hu et al. (2002)
Ishimaru et al. (1984)
Iskander and Lakhtakia (1984)
Iskander et al. (1983)
Iskander et al. (1986)
Iskander et al. (1989a)
Iskander et al. (1989b)
Jakeman (2000)
Jalava et al. (1998)
Joshi et al. (2003)
Kahn et al. (1997)
Kahnert (2004)
Kahnert et al. (2002a)
Kahnert et al. (2002b)
Kalashnikova et al. (2004)
Keenan et al. (2001)
Kerola and Larson (2001)
Khlebtsov and Mel'nikov (1995)
Khlebtsov et al. (1994)
Khlebtsov et al. (1996a)
Khlebtsov et al. (1996b)
Khlebtsov et al. (1999a)
Khlebtsov et al. (1999b)
Kollias et al. (2001)
Kollias et al. (2002)
Kollias et al. (2003)
Kolokolova (2004)
Kolokolova et al. (1997)
Kouzoubov et al. (1998)
Kouzoubov et al. (1999)
Krotkov et al. (1997)
Krotkov et al. (1999)
Kuik et al. (1992)
Kuik et al. (1994)

Kummerow and Weinman (1988)
Lacis and Mishchenko (1995)
Lakhtakia and Iskander (1983a)
Lakhtakia et al. (1981)
Lakhtakia et al. (1982a)
Lakhtakia et al. (1982b)
Lakhtakia et al. (1983)
Lakhtakia et al. (1984a)
Lakhtakia et al. (1984c)
Lambert et al. (2003)
Latimer and Barber (1978)
Liang and Mishchenko (1997)
Liou et al. (1983)
Liu and Mishchenko (2001)
Liu et al. (2002)
Lopatin and Paramonov (1989)
Lopatin and Sid'ko (1988)
Lucas (2003)
Lumme (2000)
Lumme and Rahola (1998)
Luo et al. (2003)
Macke et al. (1995)
Mackowski (2002)
Massoudi et al. (1982)
Merchant et al. (1988)
Miao et al. (2003)
Min et al. (2003)
Mishchenko (1989)
Mishchenko (1990a)
Mishchenko (1990c)
Mishchenko (1990d)
Mishchenko (1991a)
Mishchenko (1991b)
Mishchenko (1991d)
Mishchenko (1991e)
Mishchenko (1991f)
Mishchenko (1992a)
Mishchenko (1992b)
Mishchenko (1992c)
Mishchenko (1993)
Mishchenko (1994)
Mishchenko (2000)
Mishchenko and Hovenier (1995)
Mishchenko and Lacis (2003)
Mishchenko and Macke (1998)
Mishchenko and Sassen (1998)
Mishchenko and Travis (1994a)
Mishchenko and Travis (1994b)
Mishchenko and Travis (1994c)
Mishchenko and Travis (1998)
Mishchenko et al. (1995a)
Mishchenko et al. (1995b)
Mishchenko et al. (1997a)
Mishchenko et al. (1997b)
Mishchenko et al. (2000a)
Morel et al. (2002)
Mourant et al. (2002)
Mroczka et al. (2002)
Müller et al. (2003)
Nieminen et al. (2001a)
Nieminen et al. (2001b)
Nilsson et al. (1998)
Nousiainen and Vermeulen (2003)
Oppel et al. (2002)
Paramonov (1994a)
Paramonov (1994b)
Paramonov (1994d)
Paramonov and Lopatin (1989)
Paramonov et al. (1986a)
Paramonov et al. (1986b)
Paramonov et al. (1989)
Peter et al. (2003)
Petrova (1999a)
Petrova (1999b)
Petrova and Markiewicz (1997)
Pilinis and Li (1998)
Pitter et al. (1999)
Porco et al. (2003)
Porstendorfer et al. (1999)
Prodi et al. (1999)
Qingan et al. (1998)
Quirantes and Delgado (1995a)
Quirantes and Delgado (1995b)
Quirantes and Delgado (1998)
Reichardt et al. (2002)
Roberti and Kummerow (1999)
Roessler et al. (1983)
Ruppin (1998)

Ryde and Matijević (1994)
Sakai et al. (2002)
Sakai et al. (2003)
Schulz et al. (1998a)
Schulz et al. (1998b)
Schulz et al. (1999b)
Seliga and Bringi (1978)
Seow et al. (1998)
Shvalov et al. (2000)
Sid'ko et al. (1980)
Sinyuk et al. (2003)
Streekstra et al. (1994)
Thomas et al. (2002)
Toon et al. (1990)
Toon et al. (2000)
Troitsky et al. (2001)
Troitsky et al. (2003)
Tsang et al. (1984)
Tsias et al. (1999)
Tzeng et al. (1985)
Vargas and Niklasson (2001)
Vargas and Niklasson (2002)
Veihelmann et al. (2004)
Vivekanandan et al. (1991)
Voigt et al. (2003)
Voshchinnikov et al. (2000)
Wang et al. (1980)
Warner (1975)
Warner and Hizal (1976)
Waterman (1971)
Waterman (1979)
Wauben et al. (1993)
Whitney and Wolff (2002)
Wielaard et al. (1997)
Wirth et al. (1999)
Wolff and Clancy (2003)
Wong et al. (2004)
Wriedt and Doicu (1998b)
Xing and Greenberg (1994a)
Xing and Greenberg (1994b)
Yeh et al. (1982b)
Yilmaz et al. (2003)
Zakharova and Mishchenko (2000)
Zhao and Hu (2003)
Zrnić et al. (2000)

2.14. *T-matrix calculations for Chebyshev and generalized Chebyshev particles*

Battaglia et al. (2001b)
Chýlek and Ramaswamy (1982)
Chylek et al. (1981)
Crosta et al. (2001)
Crosta et al. (2003)
Ding and Xu (1999)
Flesia et al. (1994)
Mannoni et al. (1996)
Mishchenko (1989)
Mishchenko (1990c)
Mishchenko (1990d)
Mishchenko (1991a)
Mishchenko (1991d)
Mishchenko (1994)
Mishchenko (2000)
Mishchenko and Lacis (2003)
Mishchenko and Sassen (1998)
Mishchenko and Travis (1994b)
Mugnai and Wiscombe (1980)
Mugnai and Wiscombe (1986)
Mugnai and Wiscombe (1989)
Wiscombe and Mugnai (1986)
Wiscombe and Mugnai (1988)

2.15. *T-matrix calculations for finite circular cylinders*

Appleyard and Davies (2004)
Baran (2003)
Baran and Francis (2004)
Baran et al. (2003)

Barber (1977a)
Barber et al. (1982)
Baumgarten et al. (2002)
Ding and Xu (2002)
Dlugach and Mishchenko (2004)
Doicu and Wriedt (1997c)
Eremina and Wriedt (2003)
Evans et al. (1999)
Francis et al. (1999)
Gordon et al. (2001)
Havemann and Baran (2001)
Hovenier et al. (1996)
Kahn et al. (2003)
Kahnert et al. (2002a)
Kahnert et al. (2002b)
Khlebtsov et al. (2004a)
Kuik et al. (1994)
Lapalme and Patitsas (1993a)
Lapalme and Patitsas (1993b)
Lee et al. (2003)
Liu and Mishchenko (2001)
Liu et al. (1998)
Liu et al. (1999)
Mackowski (2002)
Merchant et al. (1988)
Miao et al. (2003)
Mishchenko (2000)
Mishchenko and Macke (1998)
Mishchenko and Macke (1999)
Mishchenko and Sassen (1998)
Mishchenko et al. (1996a)
Mishchenko et al. (1997b)
Nieminen et al. (2001)
Oppel et al. (2002)
Pulbere and Wriedt (2004)
Ruppin (1990)
Waterman (1971)
Waterman (1973)
Waterman (1979)
Wauben et al. (1993)
Wielaard et al. (1997)
Xing and Greenberg (1994)
Yang et al. (2003)
Yilmaz et al. (2003)
Zakharova and Mishchenko (2001)

2.16. *T-matrix calculations for various rotationally symmetric particles*

Aydin and Seliga (1984)
Aydin et al. (1984)
Barber and Massoudi (1982)
Barber and Yeh (1975)
Bates and Wong (1974)
Bringi and Seliga (1977a)
Bringi and Seliga (1980)
Doicu and Wriedt (1997c)
Hizal (1980)
Lakhtakia and Iskander (1983a)
Lakhtakia et al. (1983)
Lapalme and Patitsas (1993a)
Li et al. (2001)
Mishchenko and Videen (1999)
Mishchenko and Lacis (2003)
Ngo et al. (1997)
Prodi et al. (1999)
Schuh and Wriedt (2003)
Ström and Zheng (1987)
Sturniolo et al. (1995)
Videen et al. (1996)
Warner and Hizal (1976)
Waterman (1965)
Waterman (1971)
Waterman (1973)
Waterman (1979)
Waterman (1980)
Wriedt and Doicu (1997)
Yeh et al. (1982a)
Yeh et al. (1982b)

2.17. T-matrix calculations for ellipsoids, polyhedral scatterers, and other particles lacking axial symmetry

Baran and Francis (2004)
Baran et al. (2001a)
Baran et al. (2001b)
Björkberg and Kristensson (1987)
Havemann and Baran (2001)
Havemann et al. (2003)
Kahnert (2004)
Kahnert et al. (2001a)
Kahnert et al. (2001b)
Kahnert et al. (2002a)
Kahnert et al. (2002b)
Laitinen and Lumme (1998)
Mitchell et al. (2001)
Schneider and Peden (1988)
Schneider et al. (1991)
Wriedt (2002)
Wriedt and Comberg (1998)
Wriedt and Doicu (1998b)

2.18. T-matrix calculations for layered and composite particles

Aydin and Zhao (1990)
Aydin et al. (1983)
Bringi and Seliga (1977a)
Bringi and Seliga (1977b)
Cooper et al. (1983)
Doicu and Wriedt (2001b)
Doicu and Wriedt (2001c)
Doicu and Wriedt (2001d)
Hizal (1980)
Hofer and Glatter (1989)
Mazumder et al. (1992)
Quirantes (1999)
Quirantes and Delgado (2001)
Ström and Zheng (1988)
Ström and Zheng (1989)
Wang and Barber (1979)
Wang et al. (1979)
Zheng (1988)
Zheng (1989)
Zheng and Ström (1989)

2.19. T-matrix calculations for clusters of homogeneous spheres

Abel et al. (2003)
Andersen et al. (2002)
Andersen et al. (2004)
Arnold et al. (1994)
Auger and Stout (2003)
Auger et al. (2000)
Auger et al. (2003)
Borghese et al. (1984a)
Borghese et al. (1984b)
Borghese et al. (1984c)
Borghese et al. (1987b)
Borghese et al. (1989)
Borghese et al. (2001)
Botet et al. (1997)
Bruning and Lo (1971b)
Chew (1989)
Chew and Lu (1995)
Chew et al. (1990)
Chew et al. (1994)
Comberg and Wriedt (1999)
Cruz et al. (1989)
de Abajo (1999a)
de Abajo (1999b)
de Daran et al. (1995)
Flatau et al. (1993)
Fonseca et al. (1993)
Fonseca et al. (1994)
Fucile et al. (1995)
Fuller (1991)
Fuller (1995)
Fuller and Kattawar (1988a)
Fuller and Kattawar (1988b)
Fuller et al. (1986)
Fuller et al. (1999)

Gérardy and Ausloos (1982)
Gustafson et al. (2001)
Hamid (1996)
Hamid et al. (1990a)
Hamid et al. (1990b)
Hamid et al. (1991)
Holler et al. (2000)
Hovenier and Mackowski (1998)
Hovenier et al. (1996)
Ioannidou et al. (1995)
Jin and Huang (1996a)
Kattawar and Dean (1983)
Khlebtsov et al. (2000)
Khlebtsov et al. (2004b)
Kimura (2001)
Kimura et al. (2003)
Landgraf et al. (1999)
Litvinov et al. (2003)
Lu and Chew (1993)
Mackowski (1991)
Mackowski (1994)
Mackowski and Mishchenko (1996)
Manoharan et al. (2003)
Mishchenko (1996)
Mishchenko and Mackowski (1994)
Mishchenko and Mackowski (1996)
Mishchenko et al. (1995a)
Mishchenko et al. (2004)
Miyazaki and Jimba (2000)
Miyazaki et al. (2002)
Miyazaki et al. (2003)
Miyazaki et al. (2004)
Ovod (1999)
Ovod et al. (1998)
Pellegrino et al. (1997)
Petrova et al. (2000)
Petrova et al. (2001a)
Petrova et al. (2001b)
Pustovit et al. (2002)
Quinten (1999)
Quinten and Kreibig (1988)
Quinten and Kreibig (1993)
Quinten et al. (2000)
Quinten et al. (2002)
Quirantes and Delgado (2003)
Quirantes et al. (2001)
Ruppin (1999)
Saija et al. (1985)
Saija et al. (2001a)
Saija et al. (2001b)
Saija et al. (2003a)
Saija et al. (2003b)
Schnaiter et al. (2003)
Secker et al. (2000)
Siqueira and Sarabandi (2000)
Stout et al. (2001)
Stout et al. (2002a)
Stout et al. (2002b)
Tishkovets (1994)
Tishkovets (1998)
Tishkovets and Litvinov (1996)
Tishkovets and Litvinov (1999)
Tishkovets et al. (1999)
Tishkovets et al. (2004a)
Tishkovets et al. (2004b)
Tzeng and Fung (1994)
Usami (1999)
Vargas and Niklasson (2001)
Vargas and Niklasson (2002)
Videen et al. (1997a)
Videen et al. (1997b)
Videen et al. (1998)
Videen et al. (2000)
Wang and Chew (1993)
Wurm and Schnaiter (2002)
Xu (1995)
Xu (1997a)
Xu (1998a)
Xu (2003b)
Xu (2003c)
Xu (2004)
Xu and Gustafson (1997)
Xu and Gustafson (1999)
Xu and Gustafson (2001)
Xu and Wang (1998)
Xu et al. (1999)
Zhao et al. (2003)
Zhong et al. (2004)

2.20. T-matrix calculations for clusters of layered spheres

Borghese et al. (1987a)
Hamid et al. (1992)
Hamid et al. (2003)
Khlebtsov et al. (2004b)
Xu and Khlebtsov (2003)

2.21. T-matrix calculations for clusters of nonspherical monomers

Cruz et al. (1989)
Huang and Jin (1998)
Jin and Huang (1996b)
Şahin and Miller (1998)
Vargas et al. (1993)
Xu (2003a)

2.22. T-matrix calculations for particles with one or several (eccentric) inclusions

Auger et al. (2001)
Auger et al. (2004)
Borghese et al. (1992)
Borghese et al. (1994)
Borghese et al. (1998)
Chýlek and Videen (1998)
Chýlek et al. (1996)
Chýlek et al. (1998)
Chýlek et al. (2000)
Doicu and Wriedt (2001a)
Fikioris and Uzunoglu (1979)
Fuller (1995b)
Fuller et al. (1999)
Hill et al. (1997)
Iatì et al. (2001)
Ioannidou and Chrissoulidis (2002)
Ioannidou et al. (1999)
Jones (1995)
Krieger et al. (2003)
Krieger et al. (2004)
Mackowski and Jones (1995)
Ngo and Pinnick (1994)
Ngo et al. (1996)
Pellegrino et al. (1997)
Pinnick et al. (2000)
Prabhu et al. (2001)
Roumeliotis and Fikioris (1981)
Rozenberg (1974)
Skaropoulos et al. (1994)
Schuh and Wriedt (2001)
Secker et al. (2000)
Simão et al. (2001)
Skaropoulos et al. (1996)
Stout et al. (2003)
Videen and Chylek (1998)
Videen and Ngo (1998)
Videen et al. (1994)
Videen et al. (1995)
Videen et al. (1997b)
Videen et al. (2000)
Videen et al. (2001)

2.23. T-matrix calculations of optical resonances in nonspherical particles

Arnold et al. (1994)
Barber and Hill (1988)
Barber and Massoudi (1982)
Barber et al. (1982)
Borghese et al. (1987a)
Borghese et al. (1998)
Fuller (1989)
Fuller (1991)

Fuller (1995b)
Fuller et al. (1986)
Hill and Benner (1988)
Gérardy and Ausloos (1982)
Khlebtsov et al. (1996a)
Khlebtsov et al. (2004a)
Kristensson (1984)
Lai et al. (1991)
Mazumder et al. (1992)
Merchant et al. (1988)
Mishchenko and Lacis (2003)
Miyazaki and Jimba (2000)
Ngo and Pinnick (1994)
Ruppin (1998)
Ruppin (1999)
Simão et al. (2001)
Tzeng et al. (1985)
Überall et al. (1985)
Zhao et al. (2003)
Zheng (1989)
Zheng and Ström (1991)

2.24. *T-matrix calculations of optical forces and torques on small particles*

Bayoudh et al. (2003)
Bishop et al. (2003)
Mishchenko (1991e)
Nieminen et al. (2001a)
Nieminen et al. (2001b)
Saija et al. (2003a)

2.25. *T-matrix calculations of internal, surface, and local fields*

Astafieva and Babenko (1999)
Babenko and Petrov (2002)
Barber (1977b)
Barber et al. (1983a)
Barber et al. (1983b)
Bates and Wong (1974)
Bringi and Seliga (1980)
Cline et al. (1986)
Cruz et al. (1989)
Iskander et al. (1980)
Lakhtakia and Iskander (1983b)
Lakhtakia et al. (1981)
Lakhtakia et al. (1982a)
Lakhtakia et al. (1983)
Lakhtakia et al. (1984c)
Mackowski and Jones (1995)
Nilsson et al. (1998)
Şahin and Miller (1998)
Skaropoulos et al. (1996)
Stout et al. (2002b)
Tishkovets (1998)
Vargas et al. (1993)
Wang et al. (1980)
Waterman (1999)
Xu (2003c)
Xu (2004)

2.26. *Illumination by focused beams and non-plane waves*

Bayoudh et al. (2003)
Bishop et al. (2003)
Doicu and Wriedt (1997a)
Doicu and Wriedt (1997d)
Doicu and Wriedt (1997e)
Lakhtakia et al. (1982a)
Lakhtakia et al. (1982b)
Li et al. (2001)
Nieminen et al. (2003b)
Ovod (1999)
Yeh et al. (1982b)

2.27. Use of T-matrix calculations for testing other theoretical techniques

Andersen et al. (2002)
Andersen et al. (2004)
Babenko and Petrov (2002)
Baran et al. (1998)
Baran et al. (2001b)
Barber and Wang (1978)
Chýlek and Ramaswamy (1982)
Chýlek and Videen (1998)
Comberg and Wriedt (1999)
Doicu et al. (2000b)
Evans and Fournier (1994)
Flatau et al. (1993)
Fournier and Evans (1991)
Gordon et al. (2001)
Goedecke and O'Brien (1988)
Havemann et al. (2003)
Holt (1980)
Holt (1982)
Hovenier and Mackowski (1998)
Hovenier et al. (1996)
Iskander et al. (1989a)
Kahnert et al. (2001a)
Khlebtsov et al. (1991)
Khlebtsov et al. (1994)
Kimura (2001)
Lapalme and Patitsas (1993b)
Latimer and Barber (1978)
Liu et al. (1998)
Lopatin et al. (1987)
Macke et al. (1995)
Mishchenko (1990a)
Mishchenko (1990d)
Mishchenko (1991b)
Mishchenko and Macke (1999)
Mitchell et al. (2001)
Paramonov et al. (1986a)
Paramonov et al. (1986b)
Paramonov et al. (1989)
Peltoniemi (1996)
Petrova and Markiewicz (1997)
Qingan et al. (1998)
Ravey and Mazeron (1983)
Ruppin (1990)
Schulz et al. (1998a)
Seliga and Bringi (1978)
Simão et al. (2001)
Streekstra et al. (1994)
Videen and Chýlek (1998)
Videen et al. (1994)
Voshchinnikov et al. (2000)
Wielaard et al. (1997)
Wriedt and Comberg (1998)
Xu and Gustafson (1999)
Zhao and Hu (2003)
Zhao et al. (2003)

2.28. Comparisons of T-matrix and effective-medium-approximation results

Botet et al. (1997)
Chew (1989)
Chýlek and Videen (1998)
Chýlek et al. (2000)
Doicu and Wriedt (2001a)
Fonseca et al. (1994)
Fuller et al. (1999)
Gustafson et al. (2001)
Neo et al. (1999)
Siqueira and Sarabandi (2000)
Videen and Chýlek (1998)
Videen et al. (1994)
Zurk et al. (1996)

2.29. Comparisons of T-matrix and controlled laboratory results

Arnold et al. (1994)
Borghese et al. (1989)
Bringi and Seliga (1977a)
Bringi and Seliga (1977b)
Bruning and Lo (1971b)
Fuller et al. (1986)
Kattawar and Dean (1983)
Mishchenko and Mackowski (1996)
Qingan et al. (1998)
Ruppin (1990)
Varadan et al. (1983)
West et al. (1994)
Xu (1997a)
Xu (1998a)
Xu and Gustafson (1997)
Xu and Gustafson (1999)
Xu and Gustafson (2001)
Xu and Wang (1998)

2.30. Use of T-matrix calculations for analyzing laboratory data

Balzer and Rubahn (2001)
Balzer et al. (1998)
Bazhan et al. (2002)
Chen et al. (2003)
Crosta et al. (2001)
Crosta et al. (2003)
Doicu et al. (1998)
Fonseca et al. (1993)
Hill et al. (1984)
Holler et al. (1998)
Holler et al. (2000)
Jalava et al. (1998)
Khlebtsov et al. (1994)
Krieger et al. (2003)
Krieger et al. (2004)
Lambert et al. (2003)
Mitchell et al. (2001)
Miyazaki et al. (2002)
Miyazaki et al. (2004)
Ngo and Pinnick (1994)
Nousiainen and Vermeulen (2003)
Pellegrino et al. (1997)
Pinnick et al. (2000)
Pitter et al. (1999)
Quinten and Kreibig (1988)
Quinten et al. (2000)
Quirantes and Delgado (1995a)
Quirantes and Delgado (1995b)
Quirantes and Delgado (1998)
Ryde and Matijević (1994)
Secker et al. (2000)
Varadan et al. (1985a)
Videen et al. (1996)
Videen et al. (1997a)
Videen et al. (1997b)
Videen et al. (2000)
Volten et al. (1999)

2.31. T-matrix modeling of scattering properties of mineral aerosols in the terrestrial atmosphere and soil particles

Dubovik et al. (2002)
Heintzenberg et al. (2002)
Hill et al. (1984)
Kahn et al. (1997)

Kahnert (2004)
Kalashnikova et al. (2004)
Krotkov et al. (1997)
Krotkov et al. (1999)
Lacis and Mishchenko (1995)
Liang and Mishchenko (1997)
Liu et al. (2002)
Mishchenko et al. (1995b)
Mishchenko et al. (1997a)
Müller et al. (2003)
Nousiainen and Vermeulen (2003)
Pilinis and Li (1998)
Reid et al. (2003)
Sakai et al. (2002)
Sakai et al. (2003)
Sinyuk et al. (2003)
Veihelmann et al. (2004)
Wang et al. (2003)

2.32. T-matrix modeling of scattering properties of carbonaceous and soot aerosols and soot-containing aerosol and cloud particles

Abel et al. (2003)
Chylek et al. (1981)
Chýlek et al. (1995)
Chýlek et al. (1996)
Fuller (1995a)
Fuller (1995b)
Fuller et al. (1999)
Khlebtsov and Mel'nikov (1995)
Quinten (1999)
Quinten et al. (2002)
Roessler et al. (1983)
Schnaiter et al. (2003)
Videen and Chýlek (1998)
Videen et al. (1994)

2.33. T-matrix modeling of scattering properties of cirrus cloud particles

Babur et al. (2002)
Bantges et al. (1999)
Baran (2003)
Baran and Francis (2004)
Baran et al. (1998)
Baran et al. (2001a)
Baran et al. (2001b)
Baran et al. (2003)
Battaglia et al. (2001a)
Borrmann et al. (1996)
Borrmann et al. (2000)
Czekala (1998)
Ding and Xu (2002)
Evans et al. (1999)
Francis et al. (1999)
Havemann et al. (2003)
Hogan et al. (2000)
Kahn et al. (2003)
Lee et al. (2003)
Miao et al. (2003)
Mishchenko and Macke (1998)
Mishchenko and Macke (1999)
Mishchenko et al. (1997b)
Mitchell et al. (2001)
Oppel et al. (2002)
Peter et al. (2003)
Prodi et al. (1999)
Saija et al. (2001b)
Sreerekha et al. (2002)
Stubenrauch et al. (1999)
Thomas et al. (2002)
Troitsky et al. (2001)
Troitsky et al. (2003)
Yang et al. (2003)

2.34. T-matrix modeling of scattering properties of hydrometeors

Aydin and Daisley (2002)
Aydin and Lure (1991)
Aydin and Seliga (1984)
Aydin and Walsh (1999)
Aydin and Zhao (1990)
Aydin et al. (1984)
Aydin et al. (1989)
Aydin et al. (1998)
Barksdale and Bostian (1988)
Battaglia et al. (2001b)
Bringi and Chandrasekar (2001)
Bringi and Seliga (1977a)
Bringi et al. (1998)
Carey et al. (2000)
Czekala and Simmer (1998)
Czekala and Simmer (2002)
Czekala et al. (1999)
Czekala et al. (2001a)
Durden (2003)
Gosset (2004)
Haferman (2000)
Hubbert and Bringi (2003)
Ioannidou et al. (1999)
Jain and Watson (1985)
Keenan et al. (2001)
Kennedy et al. (2001)
Kollias et al. (2001)
Kollias et al. (2002)
Kollias et al. (2003)
Kummerow and Weinman (1988)
Mishchenko (1992a)
Prigent et al. (2001)
Prodi et al. (1999)
Qingan et al. (1998)
Roberti and Kummerow (1999)
Rozenberg (1974)
Seliga and Bringi (1978)
Seow et al. (1998)
Sturniolo et al. (1995)
Vivekanandan et al. (1991)
Wang and Barber (1979)
Warner (1975)
Warner and Hizal (1976)
Wiedner et al. (2004)
Yeh et al. (1982a)
Zrnić et al. (2000)

2.35. T-matrix modeling of scattering properties of terrestrial stratospheric aerosol and cloud particles

Brogniez et al. (2003)
Brooks et al. (2004)
Carslaw et al. (1998a)
Carslaw et al. (1998b)
Flentje et al. (2002)
Flesia et al. (1994)
Fueglistaler et al. (2002)
Fueglistaler et al. (2003)
Gerding et al. (2003)
Höpfner et al. (2001)
Hu et al. (2002)
Liu and Mishchenko (2001)
Luo et al. (2003)
Reichardt et al. (2000)
Reichardt et al. (2002)
Toon et al. (1990)
Toon et al. (2000)
Tsias et al. (1999)
Voigt et al. (2003)
Wirth et al. (1999)

2.36. T-matrix modeling of scattering properties of noctilucent cloud particles

Alpers et al. (2001)
Baumgarten et al. (2002)
Mishchenko (1992c)
Zakharova and Mishchenko (2000)
Zakharova and Mishchenko (2001)

2.37. T-matrix modeling of scattering properties of hydrosol particles

Kouzoubov et al. (1998)
Kouzoubov et al. (1999)
Morel et al. (2002)

2.38. T-matrix modeling of scattering properties of aerosol and cloud particles in planetary atmospheres

Dlugach and Mishchenko (2004)
Dlugach and Petrova (2003)
Dlugach et al. (2002a)
Dlugach et al. (2002b)
Mishchenko (1991f)
Petrova (1999a)
Petrova (1999b)
Petrova and Markiewicz (1997)
Rannou et al. (1997)
Wolff and Clancy (2003)
Wong et al. (2004)

2.39. T-matrix modeling of scattering properties of interstellar, interplanetary, and cometary particles

Andersen et al. (2002)
Andersen et al. (2004)
Bonev et al. (2002)
Gledhill and McCall (2000)
Gustafson et al. (2001)
Iatì et al. (2001)
Kerola and Larson (2001)
Kimura (2001)
Kimura et al. (2003)
Kolokolova (2004)
Kolokolova et al. (1997)
Landgraf et al. (1999)
Lucas (2003)
Lumme (2000)
Mishchenko (1989)
Mishchenko (1990c)
Mishchenko (1991b)
Petrova et al. (2000)
Petrova et al. (2001a)
Petrova et al. (2001b)
Porco et al. (2003)
Quinten et al. (2002)
Saija et al. (2001a)
Saija et al. (2003a)
Throop and Esposito (1998)
Tishkovets (1994)
Tishkovets and Litvinov (1999)
Tishkovets et al. (2004b)
Whitney and Wolff (2002)
Wurm and Schnaiter (2002)

2.40. T-matrix computations for industrial and military applications

Appleyard and Davies (2004)
Auger et al. (2003)
Doicu et al. (1998)
Joshi et al. (2003)
Quinten (1999)
Ryde and Matijević (1994)
Vargas (2003)
Vargas et al. (2001)

2.41. T-matrix computations for biomedical applications

Barber (1977b)
Barber (1978)
Enejder et al. (2003)
Holler et al. (2000)
Iskander et al. (1980)
Khlebtsov et al. (1994)
Khlebtsov et al. (1995)
Khlebtsov et al. (1996b)
Khlebtsov et al. (1999a)
Khlebtsov et al. (2002a)
Khlebtsov et al. (2002b)
Khlebtsov et al. (2004b)
Lakhtakia and Iskander (1983a)
Lakhtakia and Iskander (1983b)
Lakhtakia et al. (1981)
Lakhtakia et al. (1982a)
Lakhtakia et al. (1982b)
Lakhtakia et al. (1984c)
Lambert et al. (2003)
Lopatin and Sid'ko (1988)
Massoudi et al. (1982)
Mourant et al. (2002)
Mroczka et al. (2002)
Muttiah (2002)
Nilsson et al. (1998)
Paramonov (1994a)
Shvalov et al. (2000)
Sid'ko et al. (1980)
Skaropoulos et al. (1996)
Videen and Ngo (1998)
Videen et al. (1998)
Wang and Barber (1979)

2.42. T-matrix computations of anisotropic properties of colloids and other disperse media

Baran et al. (2001a)
Borghese et al. (2001)
Czekala (1998)
Fucile et al. (1995)
Huang and Jin (1998)
Jin and Huang (1996b)
Khlebtsov (1998)
Khlebtsov and Melnikov (1998)
Khlebtsov et al. (1991)
Khlebtsov et al. (1992)
Khlebtsov et al. (1999b)
Mishchenko (1990c)
Mishchenko (1991b)
Varadan et al. (1985b)

3. Particles near infinite interfaces

3.1. Seminal publications

Karlsson and Kristensson (1983)
Kristensson (1980)
Kristensson and Ström (1980)
Kristensson and Ström (1982)

3.2. Spherically symmetric particles

Aslan et al. (2004)
Bobbert and Vlieger (1986)
Bobbert et al. (1986)
Bobbert et al. (1988)

Borghese et al. (1997)
de la Peña et al. (1999b)
Fucile et al. (1997b)
González et al. (2001)
Hamid and Hamid (2000)
Hamid and Hamid (2002)
Ishikawa et al. (2000)
Johnson (1992)
Johnson (1994)
Johnson (1996)
Kim et al. (2002)
Kim et al. (2004)
Lazzari et al. (2001)
Lazzari et al. (2002)
Liu et al. (2000a)
Ngo and Videen (1997)
Quinten et al. (1999)
Ruppin (1991)
Videen (1991)
Videen (1993)
Videen (2000)
Videen et al. (1992)
Videen et al. (1993)
Videen et al. (2004)
Wannemacher et al. (1999)
Zvyagin and Goto (1998)

3.3. *Non-spherically symmetric finite particles*

Bobbert and Vlieger (1987)
Bobbert et al. (1987)
Borghese et al. (1995)
Borghese et al. (1997)
Denti et al. (1999a)
Denti et al. (1999b)
Doicu et al. (1999a)
Doicu et al. (2000a)
Doicu et al. (2001)
Germer (2002)
Lazzari et al. (2001)
Lazzari et al. (2002)
Simonsen et al. (2000)
Videen (1995)
Videen (1996)
Videen (1997)
Wind et al. (1987a)
Wind et al. (1987b)
Wind et al. (1988)
Wriedt and Doicu (1998a)
Wriedt and Doicu (2000)

3.4. *Finite particles on incident side of planar interface*

Bobbert and Vlieger (1986)
Bobbert and Vlieger (1987)
Bobbert et al. (1986)
Bobbert et al. (1987)
Bobbert et al. (1988)
Borghese et al. (1995)
Borghese et al. (1997)
de la Peña et al. (1999b)
Denti et al. (1999a)
Denti et al. (1999b)
Doicu et al. (1999a)
Doicu et al. (2000a)
Fucile et al. (1997b)
Germer (2002)
González et al. (2001)
Hamid and Hamid (2000)
Hamid and Hamid (2002)
Johnson (1992)
Johnson (1994)
Johnson (1996)
Kim et al. (2002)
Kim et al. (2004)
Lazzari et al. (2001)
Lazzari et al. (2002)
Ngo and Videen (1997)
Ruppin (1991)
Simonsen et al. (2000)
Videen (1991)

Videen (1995)
Videen (1997)
Videen (2000)
Videen et al. (1992)
Videen et al. (1993)
Wind et al. (1987a)
Wind et al. (1987b)
Wind et al. (1988)
Wriedt and Doicu (1998a)
Wriedt and Doicu (2000)

3.5. Finite particles on transmitted side of planar interface

Aslan et al. (2004)
Doicu et al. (2001)
Ishikawa et al. (2000)
Liu et al. (2000a)
Quinten et al. (1999)
Videen (1993)
Videen (1996)
Videen et al. (2004)
Wannemacher et al. (1999)
Zvyagin and Goto (1998)

3.6. Two-dimensional particles near planar substrates

Borghi et al. (1996a)
Borghi et al. (1996b)
Borghi et al. (1997)
Borghi et al. (1999)
Borghi et al. (2000)
de la Peña et al. (1999a)
Lee (1999)
Lee and Grzesik (1998)
Rao and Barakat (1989)
Rao and Barakat (1991)
Rao and Barakat (1994)
Videen and Ngo (1997)

3.7. Tools for particle characterization

Aslan et al. (2004)
Bobbert and Vlieger (1987)
Bobbert et al. (1986)
Bobbert et al. (1987)
Bobbert et al. (1988)
de la Peña et al. (1999a)
de la Peña et al. (1999b)
Doicu et al. (2001)
Ishikawa et al. (2000)
Johnson (1994)
Kim et al. (2002)
Kim et al. (2004)
Liu et al. (2000a)
Quinten et al. (1999)
Videen (1997)
Wannemacher et al. (1999)
Wind et al. (1987a)
Wind et al. (1987b)
Zvyagin and Goto (1998)

3.8. Convergence of results

de la Peña et al. (1999a)
de la Peña et al. (1999b)
Doicu et al. (1999a)
González et al. (2001)
Johnson (1996)
Videen et al. (1992)
Videen et al. (1993)

3.9. Resonances

Borghese et al. (1997)
Ishikawa et al. (2000)
Johnson (1994)
Lazzari et al. (2002)
Liu et al. (2000a)
Quinten et al. (1999)
Wannemacher et al. (1999)

3.10. Normally incident interaction-field approximation

de la Peña et al. (1999a)
de la Peña et al. (1999b)
Johnson (1994)
Johnson (1996)
Kim et al. (2002)
Ngo and Videen (1997)
Videen (1991)
Videen (1993)
Videen (1995)
Videen (1996)
Videen and Ngo (1997)
Videen et al. (1992)
Videen et al. (1993)

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