New *Scattering Information Network* project for the light scattering community

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Abstract

Current international research needs efficient exchange of information. To constantly keep information for the light scattering community up to date, to start a project for a new *Scattering Information Network* has been proposed. The history and the concept of the project will be reported.

1 Introduction

With current international research efficient and fast exchange of information is needed. The internet can help in many respects but Google and other search engines only may not provide all the information that is needed. Therefore information web sites have been set up by members of the community over the years.
All this web sites provide relevant information to the community, but relevant information is quite disperse, quite diverse, and it is difficult to keep all information up to date.
One reason for this is of cause that most of these enthusiasts can care for these web sites only in their spare time. Because of this we felt that we should care for a new *Scattering Information Network* web site full time. We applied for funding of this new web site by the German Research Foundation (DFG). In the next section we will give a short overview of existing web information, following that we will report on the history of the project and we shortly outline the concept of the new web site we currently have in mind.

2 Existing information web sites

In this section we give a short overview over existing information web sites which are intended for the light scattering community or which may of interest for all researchers working in this field. For the light scattering community there is the *Directory of Members of the Electromagnetic Scattering Community* by M. Mishchenko [1] listing members of the community with their addresses and email data. The *Electromagnetic and Light Scattering by Particles Newsletter* is published regularly by L. Kolokolova. Both the list of *Electromagnetic Scattering Programs* by T. Wriedt [3] and *SCATTERLIB Light Scattering Codes Library* by P. Flatau [4] have been founded at about the same time and mainly focus on providing information on computer programs. But additional information such as information on new book and conferences is also included.
Additionally there is the *Minsk bibliography on light scattering* V. Babenko [5], the *Database of Optical Constants* [6] and the *Amsterdam Light Scattering Database* H. Volten [7]. B. Gustafson provides a *Database of microwave-analog-to-light-scattering data* [8].

3 History of *Electromagnetic scattering programs*

The new project dates back to the internet side *Electromagnetic Scattering Programs* [3] which exists nearly for 14 years. It was started following the first „seminar Mie theory“, which was organized in Clausthal-Zellerfeld, Germany in 1993. This seminar was intended to clarify some problems, which at that time seemed to exist with some computer programs based on Mie theory. The seminar was arranged to compare results from different programs. It soon became clear that problems could easily be solved be using the latest program published by Wiscombe on an ftp server [9]. A first overview of available scattering programs was presented at the seminar and published later [10]. Following the seminar a first *List of available electromagnetic scattering programs* [11] was published on the web server of the Faculty of Production Engineering of the University of Bremen. At that time this web page had the highest number of hits on all web pages of this web server. With the help of the Internet archive www.archive.org the development of this web page can be traced back to 03.12.1998 [12].

4 Concept of new *Information Network*

In this section we like to shortly explain the concept of the new *Scattering Information Network* web site we plan to erect within the next year. The basic features of the information network will include the following topics, which we think are of utmost importance for the community.

- Up to date information related to the subject of light scattering e.g. conference announcements, free jobs.
- General information, answers to frequently asked questions.
- List of scientists and research groups working in the field of light scattering including subjects of research.
- Database of available computer programs.
- A user forum for researchers and students in the field.
- Database of computed T-matrices.
- Database of validated computational results.

One of our favorite topics is the list of available computer programs. We will start with this by updating information from our previous web site *Electromagnetic Scattering Programs* [3]. We will try to retrieve dead or broken links. Another way to recover lost programs is to look at our stored local information or to ask other researchers whether they have a local copy of a web site no longer available. Some older programs are only available in printed form. We will scan and may be “ocr” this printed reports or PhD theses such that we can include these programs in electronic form in the data base.

Another of our favorite topics the data base of computed T-matrices. As a T-matrix includes all information on the scattering process we assume that a data base of T-matrices may be of interest to the light scattering community. Especially with inversion problems to retrieve the shape of a scattering particle where many scattering problems need to be solved a database of T-matrices may help to reduce total computer time. We intend to implement an interface to this database in our T-matrix programs such that a user is asked whether he likes to provide his computed T-matrix to this database. We will also get in touch to other scientists working on the T-matrix method also to include such an interface into their programs. This would of cause need conversion between different types of nomenclature.

This is only a rough outline of the project. We hope that erection of the information network will lead to discussion with interested scientists which will help to improve on the concept.

5 How to contribute

Such a *Scattering Information Network* web site can not be erected without assistance from the scientific community. We therefore would like to invite all scientists working in the field and interested in the project to contribute to the concept first of all. Please send your suggestions and ideas to the authors of this abstract. We welcome any comments on the first draft of the concept we are presenting.

In the later stage of the project we would need editors who like to care for a special topic included in the *Scattering Information Network* e.g. new programs or new books published. We would also be glad if you could send any information which you think is relevant for inclusion in the *Information Network.*

6 Conclusion

During the conference we like to discus how this project can help to cope with the increasing importance of information exchange of a growing community and how the information network should be designed to help international collaboration within the light scattering community working in different scientific disciplines.

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