

Abstract

Full Article

➡ Reprints & Permissions

Figures & data

We consider the angular averaging of solutions to time-harmonic transport equations. Such quantities model measurements obtained for instance in optical tomography, a medical imaging technique, with frequency-modulated sources. Frequency modulated sources are useful to separate ballistic photons from photons that undergo scattering with the underlying medium. This paper presents a precise asymptotic description of the angularly averaged transport solutions as the modulation frequency ω tends to ∞ . Provided that scattering vanishes in the vicinity of measurements, we show that the ballistic contribution is asymptotically larger than the contribution corresponding to single scattering. Similarly, we show that singly scattered photons also have a much larger contribution to the measurements than multiply scattered photons. This decomposition is a necessary step toward the reconstruction of the optical coefficients from available measurements.

to the latest two volumes for 14 days

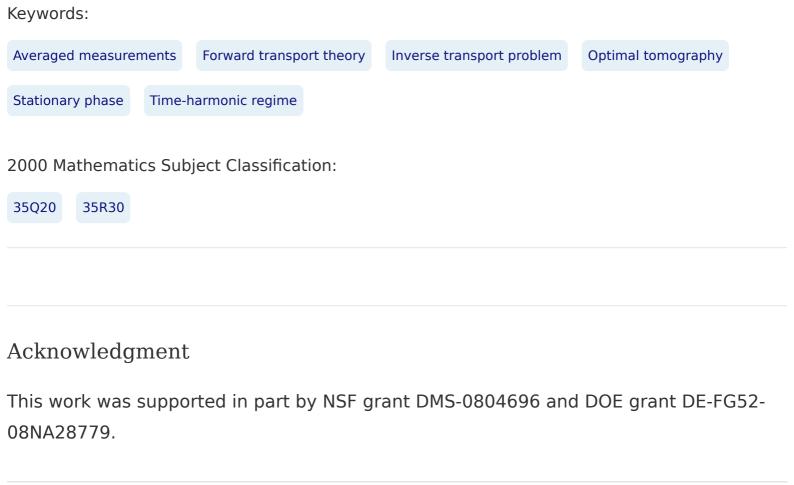
66 Citations

Share

Metrics

References

Read this article





Information for

Authors

R&D professionals

Editors

Librarians

Societies

Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

Help and information

Help and contact

Newsroom

All journals

Books

Keep up to date

Register to receive personalised research and resources by email



Sign me up











Accessibility



Copyright © 2025 Informa UK Limited Privacy policy Cookies Terms & conditions



Registered in England & Wales No. 01072954 5 Howick Place | London | SW1P 1WG