

Multiple scattering by small obstacles - Improved Foldy's model.

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Usual Foldy's model is used to approximate a multiple scattering problem involving small scatterers by monopole scatterers. Using the method of matched asymptotic expansions, with P. H. Cocquet and S. Tordeux, we have first proved that the scattered field can be approximated at any order of accuracy by multipoles. This first provides a mathematical justification for the Foldy model and next makes it possible to improve it by adding some self-interaction terms and adequately choosing the centers of phase of the effective monopoles.

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