"*Higher dimensional scattering theory and integral representation formulas*"

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Abstract

In this talk I will answer the following basic question:

What are the optimal assumptions, of geometric and analytic nature, which guarantee that a null-solution of the Helmholtz operator in an exterior domain can be represented in terms of layer potentials naturally associated with the said Helmholtz operator and given domain?

This work, at the interface between Geometric Measure Theory, Harmonic Analysis, Scattering Theory, and Clifford Analysis, generalizes and unifies classical results of Sommerfeld, Weyl, Müller, and Calderón.