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Marius Mitrea* (mitream@missouri.edu), Department of Mathematics, University of Missouri, Columbia, MO 65211. *A Unified Approach to Radiation Conditions for Helmholtz, Dirac, and Maxwell Operators*. Preliminary report.

We propose a general radiation condition for null-solutions of the Helmholtz operator which are Clifford algebra-valued. The latter is a context which naturally includes scalar-valued and vector-valued, functions, as well as differential forms. Our radiation condition reduces precisely to the classical Sommerfeld and Silver-Muller radiation conditions for the scalar Helmholtz operator and the Maxwell system, respectively, and it also encompasses as a particular case the radiation condition for perturbed Dirac operators introduced by McIntosh and Mitrea in 1999. As an upshot, we are able to unify what hetero have been perceived as distinct (yet mysteriously interconnected) theories and explain them as particular manifestation of a common, more general, principle. This is joint work with Emilio Marmolejo-Olea, Dorina Mitrea, and Irina Mitrea. (Received August 15, 2014)