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Tristan Hubsch* (thubsch@howard.edu), 2355 Sixth St., NW, Washington, DC 20059. *On Superspace Description of Representations of Supersymmetry.*

Superspace has been invented about as long ago as supersymmetry, but is not as well understood. In fact, there are certain issues in supersymmetry that should be natural to address in superspace, yet both these issues and their superspace formulation are still open questions, three decades later. One of these issues pertains to describing irreducible representations of supersymmetry in terms of superfields, where classification theorems seem to be oddly lacking. We revisit the relations between superfields and their component fields, which comprise the perhaps more familiar super-multiplets. This turns out to present supersymmetry and its representations in a framework more readily addressable in terms of ‘diagram chasing’ and similar tools of homological algebra. (Received September 20, 2005)