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True (though not in the cinematic sense) Grit DONALD PRIOUR, Youngstown State University — Many porous materials, far from having well defined channels, instead consist of grains with random orientations, shapes, and sizes. For our purposes here, the latter two structural disorder elements, when present to a significant degree, characterize assemblies of grains henceforth referred to as "grit", where the range of volumes of irregularly shaped angular fragments may span several orders of magnitude. Whereas comparatively loose configurations of impermeable inclusions would allow fluid to flow, at high enough grain densities, void spaces no longer overlap to form a system spanning network, barring fluid transport on macroscopic scales. The shift with varying density among the former and latter scenarios is known as a percolation transition. With large-scale Monte Carlo simulations involving dynamical infiltration of tracer particles, we calculate the critical concentration for irregular grains generated by a stochastic fragmentation process in which randomly placed and oriented planes truncate initially cube shaped grains; as the slices accumulate, the distribution of shapes rapidly saturateds, even as the range of grain volumes continues to spread. Nevertheless, the critical porosity converges to just over 5

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