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Woden Kusner* (wkusner@gmail.com). *Critical packings, rigidity, and the radius function*. Preliminary report.

There are a number of classical problems in geometric optimization that ask for the "best" configuration of points with respect to some function. We are interested in the relationships between various notions of criticality for such functions on configuration spaces, in particular the injectivity or packing radius. This is not a Morse function, but it has been observed to be Morse-like, in that the topological notion of regularity can be defined in an analogous way. Furthermore, there is a geometric interpretation from rigidity theory that characterizes configurations as critical by the existence of a strut measure. (Received September 13, 2016)