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Henri Petrus Roesch* (hroesch@uci.edu), 340 Rowland Hall (Bldg.#400), University of California, Irvine, Irvine, CA 92697-3875. *Proof of a Null Penrose Conjecture using a new Quasi-local Mass.*

We define an explicit quasi-local mass functional which is nondecreasing along all null foliations (satisfying a convexity assumption) of null cones. We use this new functional to prove the Null Penrose Conjecture under fairly generic conditions. (Received September 25, 2017)