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Katharine Shultis* (shultis@gonzaga.edu) and **Peder Thompson** (peder.thompson@ttu.edu). *Reducibility of parameter ideals in low powers of the maximal ideal*. Preliminary report.

It is well-known that a commutative, local, noetherian ring R is Gorenstein if and only if every parameter ideal of the ring is irreducible. A less well-known result due to Marley, Rogers, and Sakurai gives that there is an integer ℓ such that R is Gorenstein if and only if there exists an irreducible parameter ideal in the ℓ -th power of the maximal ideal. The proof of this result gives that ℓ is the smallest integer such that a certain map of Ext modules is surjective after taking socles. We investigate upper bounds on this integer ℓ . (Received February 01, 2018)