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Jay White* (jay.white@uky.edu). *Maximum Betti Numbers when fixing partial data about Hilbert functions.*

Fixing a family of ideals in a polynomial ring, consider the problem of finding a single ideal that has Betti numbers greater than or equal to the other ideals. Or, decide if such an ideal even exists. Bigatti and Hulett showed that if we take the ideals with a fixed Hilbert function, there is such an ideal: the lexsegment ideal. Caviglia and Murai showed that if we take the saturated ideals with a fixed Hilbert polynomial, there is again such an ideal. We will talk about a generalization of these two situations, an algorithm for finding the special ideals and when they exist, and some cases where we guarantee existence or find nonexistence. (Received September 17, 2019)