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Louiza Fouli* (lfouli@nmsu.edu), Department of Mathematical Sciences, Las Cruces, NM 88003, and **Tài Hà** and **Susan Morey**. *Depth bounds for monomial ideals*. Preliminary report.

We consider various lower bounds for the depths of monomial ideals. In the case of square-free monomial ideals, one can view them as edge ideals of hypergraphs and we use graph invariants to determine lower bounds for the depth of such ideals and in some instances for their powers as well. In general, even if we can find a lower bound for the depth of a monomial ideal, it is hard to find a precise regular sequence that realizes this bound. We propose a way to construct a sequence that is not necessarily a regular sequence on R/I , but instead provides a lower bound on the length of a maximal regular sequence on R/I , where R is a polynomial ring and I is a monomial ideal. (Received February 06, 2018)