1052-13-88   **Brian Harbourne*** (`bharbour@math.unl.edu`), Department of Mathematics, University of Nebraska-Lincoln, Lincoln, NE 68588-0130. *Powers versus symbolic powers of ideals.*

If I is an ideal in a polynomial ring $R = k[x_0, ..., x_n]$ over a field k, it is known by work of Ein-Lazarsfeld-Smith (using multiplier ideals) and Hochster-Huneke (using Frobenius powers and tight closure) that $I^{(m)} \subseteq I^r$ whenever $m \geq nr$ and it is known by work of Bocci-Harbourne (using algebraic geometric methods) that n is the least value of the coefficient c such that $m \geq cr$ implies $I^{(m)} \subseteq I^r$ for all ideals $I \subseteq R$. I will discuss recent questions, conjectures and results addressing the question of what values of a guarantee $I^{(m)} \subseteq I^r$ for all ideals $I \subseteq R$ given $m \geq nr - a$. (Received August 21, 2009)