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Ezra Miller* (ezra@math.duke.edu). *Topological Cohen–Macaulay criteria for monomial ideals.*

Scattered over the past few years have been several occurrences of simplicial complexes whose topological behavior characterize the Cohen-Macaulay property for quotients of polynomial rings by arbitrary (not necessarily squarefree) monomial ideals. The purpose of this survey is to gather the developments and provide direct combinatorial connections between them. (Received February 05, 2009)