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The Saturation of a Catalecticant Ideal

A catalecticant ideal is an ideal of  $t \times t$  minors of a general catalecticant matrix. It has been shown that, unlike the ideal of  $t \times t$  minors of a generic matrix of indeterminates, a catalecticant ideal is not necessarily a prime ideal. This leads naturally to asking: "Are these ideals all radical?" or "Are these ideals all saturated?" We will consider both of these questions, with the bulk of our emphasis on the second question.