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David Marker* (marker@uic.edu), UIC Department of Mathematics, 322 SEO (MC 249), 851 S. Morgan St., Chicago, IL 60607. *The model theory of differential closures.*

Differentially closed fields play a role in differential algebra and differential algebraic geometry analogous to the role played by algebraically closed fields in algebraic geometry. Interestingly, the existence and uniqueness of differential closures was first proved using model theoretic techniques and, while these proofs have been given algebraic translations they do not avoid the issues of the general model theoretic results. Differential closures also exhibit interesting phenomena not found in the classical case. I will survey these results. (Received September 10, 2019)