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Nicolas Addington, Brendan Hassett, Yuri Tschinkel and Anthony Várilly-Alvarado*
(varilly@rice.edu), Department of Mathematics MS 136, Rice University, 6100 S. Main St.,
Houston, TX 77007. *Recent progress on the rationality of some special cubic fourfolds.*

In this talk I will survey recent progress on the rationality of certain special cubic fourfolds, including work of Auel, Bolognesi, Russo, Stagliano, as well as collaborative work of Addington, Hassett, Tschinkel and myself. I will pay close attention to the case of cubic fourfolds of discriminant 18, which form a Noether-Lefschetz divisor \mathcal{C}_{18} in the coarse moduli space of cubic fourfolds \mathcal{C} . I will explain how to produce a countably infinite union of codimension-one loci in \mathcal{C}_{18} parametrizing rational cubic fourfolds. (Received August 18, 2020)