

Algebraic Geometry - Mariusz Koras in memoriam
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FORMS OF THE QUINTIC DEL PEZZO THREEFOLD V_5

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ABSTRACT. Let k be a field of characteristic zero. In this talk, we look into a k -form X of the quintic del Pezzo threefold $X_{\bar{k}} = X_k \otimes \bar{k} = V_5$. One of main results asserts that any k -form X of V_5 contains an \mathbb{A}_k^2 -cylinder. Further, we obtain a certain criterion for X to contain \mathbb{A}_k^3 in terms of the Hilbert scheme of lines on V_5 with respect to the half-anti canonical embedding. As an application, we see that every Mori Fiber Space over an algebraic complex curve whose general closed fibers are isomorphic to V_5 contains a *vertical* $\mathbb{A}_{\mathbb{C}}^3$ -cylinder. This is a joint work with Adrien Dubouloz.