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Jeroen Schillewaert* (jschillewaert@gmail.com), 7942 Avenida Navidad #104, San Diego, CA 92122. *A combinatorial characterization of Severi varieties over arbitrary fields (joint work with H. Van Maldeghem).*

The Freudenthal-Tits magic square (FTMS), may be loosely described as the octonionic construction by means of composition algebras of the exceptional Lie groups and their associated algebras, except for G_2 , which is the automorphism group of the octonions.

	\mathbb{K}	\mathbb{L}	\mathbb{H}	\mathbb{O}
\mathbb{K}	A_1	A_2	C_3	F_4
\mathbb{L}	A_2	$A_2 \times A_2$	A_5	E_6
\mathbb{H}	C_3	A_5	D_6	E_7
\mathbb{O}	F_4	E_6	E_7	E_8

The geometries corresponding to the second row of the split version of the FTMS (over any field) are Severi varieties, which are central objects in algebraic geometry and algebraic group theory.

In this talk we characterize all these varieties in a simple and uniform way. In particular, this includes a characterization of the standard module for groups of type \mathbf{E}_6 over any field. It is remarkable that this intricate geometric structure allows to be caught by a rather simple and short list of axioms. (Received September 24, 2012)