Robert Boltje, Cisil Karaguzel and Deniz Yilmaz* (deyilmaz@ucsc.edu). Fusion systems of blocks of finite groups over arbitrary fields.

Let $k$ be a field of characteristic $p > 0$ and let $G$ be a finite group. To any block idempotent $b$ of the group algebra $kG$, Puig associated a fusion system: a category that underpins the local side of the local-global considerations in modular representation theory. Puig also showed that the fusion system is saturated if the $k$-algebra $kC_G(P)e$ is split, where $(P, e)$ is a maximal $b$-Brauer pair. In this talk, we investigate the block fusion system in the non-split case by describing it in an explicit way as being generated by the fusion system of a related block idempotent over a larger field together with a single automorphism of the defect group. (Received August 10, 2020)