1103-18-104 **Jon Funk*** (jonathon.funk@cavehill.uwi.edu), , Barbados, and **Pieter Hofstra**. *Isotropy, crossed sheaves, and braidings.* Preliminary report.

Joint work with Pieter Hofstra. Our further investigation of isotropy and crossed toposes [3] uses the tools of braided involutive closed categories [1]. In fact, if Z denotes the isotropy group internal to a topos EE, then the category EE/Z of crossed sheaves is a closed category with an involution. It is also braided by virtue of the canonical crossed topos structure that Z carries, which is known in the special case of crossed G-sets as the Freyd-Yetter braiding [2,4]. The observation (by Street and probably others) that a crossed module may be regarded as an involutive commutative monoid in crossed G-sets also generalizes to isotropy theory: a crossed topos may be regarded as an involutive commutative monoid in the category of crossed sheaves. These ideas apply to the topos of unital crossed sheaves t:X–>Z (satisfying xt(x)=x); unital crossed sheaves are important because for one thing a crossed topos is unital.

[1] A. Joyal, R. Street, Braided tensor categories, Adv in Math. 102 (1), (1993).

[2] P. J. Freyd, D. N.Yetter, Braided compact closed categories with ..., Adv in Math 77 (1989).

[3] J. Funk, P. Hofstra, B. Steinberg, Isotropy and crossed toposes, TAC 26 (24) (2012).

[4] T. Yoshida, Crossed G-sets and crossed Burnside rings, (1997). (Received August 14, 2014)