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David White* (dwhite03@wesleyan.edu), Wesleyan University Department of Mathematics, Exley Science Tower, Room 655, 265 Church Street, Middletown, CT 06457. *Bousfield Localization and Commutative Monoids*.

Localization is a fundamentally important tool in mathematics. Constructing the localization of a category at a given class of maps leads naturally to the notion of a model category. Bousfield localization is a method of localizing further by turning a given class of maps into weak equivalences. In this talk we will give conditions on a monoidal model category and on the class of maps being localized so that the Bousfield localization preserves strict commutative monoids.

This problem was motivated by an example due to Mike Hill which demonstrates that for the model category of equivariant spectra, even very nice localizations can fail to preserve strict commutative monoids. A recent theorem of Hill and Hopkins gives conditions on the localization to prohibit this behavior. When we specialize our general machinery to the equivariant spectra we recover this theorem. En route to solving the localization problem we introduce an axiom which guarantees us that commutative monoids inherit a model structure. If there is time we will discuss a generalization which allows preservation of structure over arbitrary operads, and relate this to the situation of algebras in equivariant spectra over equivariant operads. (Received September 16, 2013)