

1116-03-2515

**Justin Brody\***, justin.brody@goucher.edu. *Amalgamation Classes with  $\exists$ -Closures and a Conjecture of Moss'*.

The Hrushovski construction amalgamates members of a class of finite structures  $(\mathbf{K}, \leq)$  together in a canonical way to produce a *generic* structure of the class, where  $\leq$  is strong-substructure relation on elements of  $\mathbf{K}$ . Most examples satisfy the property that for  $A, B, C \in \mathbf{K}$  if  $A \leq B$  then  $A \cap C \leq B \cap C$ . This property guarantees the uniqueness of a closure operation in the generic. In this talk we will examine properties of classes which do not have this property but are well-behaved in other ways, which we call having  $\exists$ -closures. In particular, we will examine the class  $(\mathbf{K}_d, \leq_d)$  of all finite graphs with the understanding that  $A \leq_d B$  whenever  $A$  is an *isometric* substructure of  $B$  (that is, the distance between vertices in  $A$  does not go down when  $A$  is considered as a subgraph of  $B$ ). This class has  $\exists$ -closures, and we will use this fact to shed some light on a conjecture of Larry Moss' about the class  $(\mathbf{K}_d \leq_d)$ . (Received September 22, 2015)