

1135-47-1070      **Scott M. LaLonde** and **David Milan\***, dmilan@uttyler.edu, and **Jamie Scott**. *Condition (K) for Inverse Semigroups*. Preliminary report.

A directed graph is said to satisfy Condition (L) if every cycle in the graph has an entrance and Condition (K) if every vertex that is the base of a cycle has at least two distinct return paths. We define Condition (L) and Condition (K) for inverse semigroups in such a way that a graph inverse semigroup satisfies each condition if and only if the directed graph does. We characterize the ideals in the  $C^*$ -algebras of a class of inverse of inverse semigroups satisfying Condition (K) in terms of ideals in the semigroup, generalizing the description of ideals for graph  $C^*$ -algebras. An application to the inverse semigroups of self-similar graph actions is given. (Received September 19, 2017)