

# Simplicity of Partial Skew Group Rings of Abelian Groups

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*Abstract.* Let  $A$  be a ring with local units,  $E$  a set of local units for  $A$ ,  $G$  an abelian group and  $\alpha$  a partial action of  $G$  by ideals of  $A$  that contain local units. We show that  $A \star_{\alpha} G$  is simple if and only if  $A$  is  $G$ -simple and the center of the corner  $e\delta_0(A \star_{\alpha} G)e\delta_0$  is a field for all  $e \in E$ . We apply the result to characterize simplicity of partial skew group rings in two cases, namely for partial skew group rings arising from partial actions by clopen subsets of a compact set and partial actions on the set level.