Kristopher Lee (leekm@clarkson.edu), Department of Mathematics, Clarkson University, Potsdam, NY 13699, USA, ***Generalizations of Weakly Peripherally Multiplicative Maps Between Uniform Algebras.***

ABSTRACT. There has been much work done in analyzing maps, not assumed to be linear, that preserve the spectrum or a subset of the spectrum. We investigate mappings $T\colon \mathcal{A} \to \mathcal{B}$ between uniform algebras that satisfy

$$\sigma_\pi(T(f)T(g)) \cap \sigma_\pi(fg) \neq \emptyset$$

for all $f, g \in \mathcal{A}$, where $\sigma_\pi(f)$ is the set of spectral values of f of maximum modulus. This criterion was analyzed previously by Lambert, Luttman, and Tonev (2007), under the additional assumption that T preserves the peaking functions, and it was shown that such mappings must be isometric algebra isomorphisms. We show that this assumption is not necessary given certain conditions on the underlying domains of $\mathcal{A}$ and $\mathcal{B}$, generalizing their results.