1096-VO-1877 **Timothy James All*** (all1@rose-hulman.edu). *On p-adic annihilators of real ray classes.*

Let k_n be the cyclotomic extension over $\mathbb{Q}$ of conductor n. A classical theorem of Stickelberger states that explicit elements of the Galois group ring $\mathbb{Z}[Gal(k_n/\mathbb{Q})]$ annihilate the the ideal class group of k_n. Sinnott generalized this theorem to the abelian number field case, and Schmidt further generalized this theorem so as to derive explicit annihilators of the ray class groups of an abelian number field, say k. Unfortunately, if k is real, these annihilators all regress into trivial elements, i.e., multiples of the norm. In this paper, we address the real case. To be precise, let k be a real abelian number field, and let $\mathfrak{o}$ be the ring of integers of the topological closure of k embedded into the algebraic closure of $\mathbb{Q}_p$ where p is an odd prime. Let A be the Sylow p-subgroup of a ray class group of k. In this paper, we derive explicit non-trivial elements in $\mathfrak{o}[Gal(k/\mathbb{Q})]$ that annihilate $A \otimes_{\mathbb{Z}} \mathfrak{o}$. (Received September 16, 2013)