Abstract

Let $D_n^{(v)}$ be the nth generalized derangement number that is a generalization of the classic derangement number $D_n = D_n^{(0)}$. In this note, we investigate the set S_v of those integers n for which $D_n^{(v)}$ is not a sum of three squares. We characterize the set S_0 and the set S_v for odd values of v. We prove that in these cases the set S_v has natural density and compute its value. In particular, the natural density of S_0 is equal to $1/24$.