1023-55-344 **Micah W. Chrisman*** (micah@math.hawaii.edu), University of Hawaii, Dept. of Mathematics, 2565 McCarthy Mall, Honolulu, HI 96822-2273. *Periodic Dold Sequences.*

Let $s : \mathbb{N} \to \mathbb{Z}$ be an integer sequence. We associate to this sequence the Mobius inversion sequence, denoted $M_s : \mathbb{N} \to \mathbb{Z}$. Let X be a Euclidean Neighbothood Retract and $f : X \to X$ a continuous map. Denote by $I(f)$ the fixed point index of f. The Lefshetz sequence of f is defined to be $(I(f), I(f^2), \ldots)$. A. Dold has proved that if the fixed point set of f^n is compact for all n and $s : \mathbb{N} \to \mathbb{Z}$ is the Lefshetz sequence of f, then $n|M_s(n)$ for all n. In this paper, we investigate the number theoretic properties of sequences which satisfy this property (called Dold sequences). In particular, we investigate Dold sequences which are periodic. The main result is that a Dold sequence is periodic of period m if and only if $M_s(k) = 0$ for all but finitely many k and m is the least common multiple of those k for which $M_s(k) \neq 0$. A corollary of this is that a Dold sequence is bounded if and only if it is periodic. This extends a result of Babenko and Bogatyi. (Received September 07, 2006)