for an n-gm in Wilder [13], we obtain (E) from (B) and (C). In the last section we shew how our homology invariants are connected with the concept of "avoidability" introduced by Wilder. Our results shew that (D) above includes certain results of White [20].

1.1. We continue to use essentially the notation of LTI, recalling that x is a fixed point of a locally compact subset M of Hilbert space, with neighborhoods U, V, ... It will be convenient also to add this: if $\overset{*}{H}$ is a finitely generated Abelian group then we shall write an isomorphism of the form

$$\overset{*}{H} \approx \overset{*}{M}(k) + \overset{*}{F}$$

without repeating that the R. H. S. consists of the direct sum of a module of rank k and a finite Abelian group. Further, the symbol F, with or without suffix, will always denote a <u>compact</u> subset of M.

2. ČECH AND VIETORIS HOMOLOGY. If X is any subset of M, we defined $\mathcal{H}_v^r(X)$ in LTI as the rth Vietoris homology group of X, where only cycles and homologies with compact carriers are considered. Similarly the Čech group $\mathcal{H}_c^r(X)$ is defined. Now if $F \subseteq F' \subseteq X$, there exist injection homomorphisms

$$i_N(F, F') : \mathcal{H}_N^r(F) \to \mathcal{H}_N^r(F'), \quad N = c, v$$

so that we have the direct limit, (see Wilder [13] p. 247)

$$\mathcal{H}_N^r(X) = \text{Dir Lim}\ \{ \mathcal{H}_N^r(F), \ i_N(F, F') \},$$

where the F's run through all $F \subseteq X$.

Since F is a compact Hausdorff space, there exists an isomorphism

$$\zeta_F : \mathcal{H}_v^r(F) \approx \mathcal{H}_c^r(F),$$

by Begle ([14] p. 536). Given $[\alpha] \in \mathcal{H}_v^r(X)$, and $\alpha' \in [\alpha]$, then there exists $F \subseteq X$ such that $\alpha' \in \mathcal{H}_v^r(F)$. Define $\zeta_X[\alpha]$ to be $[\zeta_F \alpha']$. Then, since

$$\zeta_{F'}\, i_v(F, F') = i_c(F, F')\, \zeta_F ,$$

it can be verified that the definition of ζ_X is independent of the choice of $\alpha' \in [\alpha]$, and that

$$\zeta_X : \mathcal{H}_v^r(X) \approx \mathcal{H}_c^r(X) .$$

Now suppose that, $X \subseteq Y \subseteq M$, and let j_N be the injections

2.1 $$j_N : \mathcal{H}_N^r(X) \to \mathcal{H}_N^r(Y), \quad N = c, v .$$

Then, since $\zeta_Y j_v = j_c\, \zeta_X$, we have