7. R. Johnson, *Lipschitz spaces, Littlewood-Paley spaces and convoluteurs*, Proc. London Math. Soc. 29 (1974), 127–141.

8. J. Peetre, *Remarques sur les espaces de Besov, Le cas* $0 < p < 1$, C. R. Acad. Sci. Paris Sér. A 277 (1973), A947–A949.

9. E. M. Stein, *Singular integrals and differentiability properties of functions*, Princeton Math. Ser., no. 30, Princeton Univ. Press, Princeton, N. J., 1970. MR 44 #7280.

10. E. Stein and A. Zygmund, *Boundedness of translation invariant operators on Hölder spaces and L^p-spaces*, Ann. of Math. (2) 85 (1967), 337–349. MR 35 #5964.

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A COHOMOLOGICAL STRUCTURAL THEOREM FOR TOPOLOGICAL ACTIONS OF Z_2-TORI ON SPACES OF Z_2-COHOMOLOGY TYPE OF SUCCESSIVE FIBRATION OF PROJECTIVE SPACES

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Let X be a given G-space and $X \rightarrow X_G \rightarrow B_G$ be the universal bundle with X as its typical fibre. We shall consider the *ordinary cohomology of the total space* $H^*(X_G)$ as the *equivariant cohomology of* X, namely, we shall take $H_G^*(X) = H^*(X_G)$ as the definition of the equivariant cohomology theory. In case G are *elementary abelian groups* (i.e., tori or Z_p-tori), several fundamental cohomological splitting theorems are formulated and proved in [1], [2] which establish definitive, neat correlations between the *cohomological orbit structures* (e.g., $H^*(F)$, orbit types, etc.) of the given G-space X and the various *ideal theoretical invariants of* $H_G^*(X)$. In the simplest cases that $H^*(X)$ are generated by a single generator (e.g., spheres, projective spaces), the ideals occur in such cohomological splitting theorems are automatically principal ideals. Therefore the cohomological structural theorems for topological ac-

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