

Splitting Manifold Approximate Fibrations

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Suppose M is a topological m -manifold, X is a generalized n -manifold satisfying the disjoint disks property (DDP), $m > n \geq 5$, $p : M \rightarrow X$ is an approximate fibration, with fiber the shape of a closed, connected topological manifold F , and Y is a compact generalized l -manifold, $n - l \geq 3$, tamely embedded in X . The conditions are examined under which p is controlled homeomorphic to an approximate fibration $\tilde{p} : M \rightarrow X$ such that $\tilde{p}|_{\tilde{p}^{-1}(Y)} : \tilde{p}^{-1}(Y) \rightarrow Y$ is, in some sense, an improvement of $p|_{p^{-1}(Y)}$. The main result is if $Wh(\pi_1(F) \times \mathbb{Z}^k) = 0$, $k = 0, 1, \dots$, and $p|_{p^{-1}(Y)}$ is controlled shape equivalent to a manifold approximate fibration $q : E \rightarrow Y$, then p is controlled homeomorphic to an approximate fibration $\tilde{p} : M \rightarrow X$ such that $\tilde{p}^{-1}(Y) \cong E$ and $\tilde{p}|_{\tilde{p}^{-1}(Y)} = q$.