

Shape m_{simpl} orientable fibrators

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Abstract. We call a closed, orientable PL n -manifold N a *codimension- k shape $m_{\text{simpl}}(o)$ -fibrator* if all proper, surjective PL maps $p : M \rightarrow B$, from any closed, (orientable) PL $(n + k)$ -manifold M to a simplicial triangulated manifold B , such that each point inverse has the same homotopy type as N , are approximate fibrations. Also we introduce a particular type of manifold called *special manifold* - closed manifold with a non-trivial fundamental group for which all self maps with non-trivial normal images on π_1 -level are homotopy equivalences. We will discuss the following question: which special manifolds are shape $m_{\text{simpl}o}$ -fibrators (a codimension- k shape $m_{\text{simpl}o}$ -fibrator for all k)? The main result states that every orientable, special PL n -manifold with non-trivial first homology group is a shape $m_{\text{simpl}o}$ -fibrator, if it is a codimension-2 shape $m_{\text{simpl}o}$ -fibrator. Then we will present new result about homology n -spheres that are codimension- $(n + 1)$ shape m_{simpl} fibrators.