Satellite Manifolds

! Oziride Manzoli Neto
Institute of Mathematical Science, University of São Paulo
E-mail: ozimneto@icmc.sc.usp.br

Let $V_F \cong_\phi F^k \times D^2$ be a tubular neighborhood of an embedding of an orientable manifold F^k in S^{k+2}. In this work we define embeddings of certain manifolds M^k in V_F. These manifolds are defined in such a way that the map $\pi : V \cong_\phi F^k \times D^2 \to F^k$ restricted to M is an n-covering map of F^k. We call these manifolds satellites of F^k, since it is a generalization of a satellite construction in the classical case. We study the relation between the Alexander Modules of the two embeddings using a special decomposition of the Abelian Covering $\tilde{X}_M$ of $S^{k+2} - V_M$. For the case of orientable surfaces in S^4 we are able to get better relations and examples.

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