

Zeitschrift: L'Enseignement Mathématique
Herausgeber: Commission Internationale de l'Enseignement Mathématique
Band: 35 (1989)
Heft: 1-2: L'ENSEIGNEMENT MATHÉMATIQUE

Artikel: KNOTTING CODIMENSION 2 SUBMANIFOLDS LOCALLY
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Bibliographie
DOI: <https://doi.org/10.5169/seals-57360>

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Case 3. The case where $n \equiv 0(4)$ and p is even. In this case $L_{n+3}(\mathbf{Z}_p, 1) \simeq \mathbf{Z}_2$. Since the value $\gamma_*\sigma(h) \in L_{n+3}(\mathbf{Z}_p, 1)$ is additive with respect to connected sum, it necessarily vanishes for $(S^{n+2}, K) \# (S^{n+2}, K)$.

The rest of the argument is the same as that in Step 5. This proves the theorem. Q.E.D.

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(Reçu le 18 février 1988)

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