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Prolongements des difféomorphismes de la sphère. (French) [Extensions of diffeomorphisms of the sphere]

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For $n \geq 1$ and $0 \leq k \leq \infty$, let $\text{Diff}_0^k(S^n)$ and $\text{Diff}_0^k(B^{n+1})$ denote the groups of C^k -diffeomorphisms of the unit sphere S^n and of the unit closed disk B^{n+1} of \mathbf{R}^{n+1} which are C^k -isotopic to the identity, respectively. The author proves the following result: There does not exist any group morphism σ of $\text{Diff}_0^\infty(S^n)$ to $\text{Diff}_0^1(B^{n+1})$ such that for every $f \in \text{Diff}_0^\infty(S^n)$ the diffeomorphism $\sigma(f)$ is an extension of f .

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