Universidade Federal de São Carlos
Departamento de Matemática

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Falará sobre

Homotopy Properties of the Inclusion Map $F_n(X) \hookrightarrow \prod_1^n X$ for Some Orbit Spaces X

Let X be a space and $\prod_1^n X$ denote the n-fold Cartesian product of X with itself. The n-th configuration space of X is defined by

$$F_n(X) = \Big\{(x_1, \ldots, x_n) \in \prod_1^n X \mid x_i \neq x_j \text{ for all } i \neq j\Big\}.$$

Write $i_n(X) : F_n(X) \hookrightarrow \prod_1^n X$ for the inclusion map. If X is a surface different from $\mathbb{S}^2$ and $\mathbb{R}P^2$ then the group

$$\ker\big(\pi_1(i_n(X)) : \pi_1(F_n(X)) \to \pi_1(\prod_1^n X)\big)$$

has been described by Goldberg (1973). For $X = \mathbb{S}^2$ and $\mathbb{R}P^2$, the homotopy fibre of the inclusion map $i_n(X) : F_n(X) \hookrightarrow \prod_1^n X$ has been extensively studied by D.L. Gonçalves and J. Guaschi in a recent paper. We describe the homotopy type of the homotopy fibre $I_{i_n(X)}$ of the inclusion map $i_n(X) : F_n(X) \hookrightarrow \prod_1^n X$ for manifolds X which are orbit spaces of a free action of a Lie group G on the m-Euclidean space $\mathbb{R}^m$ or the m-sphere $\mathbb{S}^m$ for $m \geq 3$. Then, the associated long exact homotopy sequence of the fibration $I_{i_n(X)} \to F_n(X) \overset{i_n(X)}{\hookrightarrow} \prod_1^n X$ is examined.

Sexta-feira, 4 de dezembro, às 10h no Auditório