Structural foundations for equivariant fibration theorems

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Abstract

We study several structural properties that determine when projections between homogeneous spaces give rise to equivariant fibrations. We focus on three key conditions: the projection $G \to G/H$ viewed as a conjugate H-fibration, the preservation of fibrations under the twisted-product functor $G \times_H (-)$, and a straightening condition for G-homeomorphisms of the form $X \times I \approx G \times_H A$. We prove that the first two conditions are equivalent, and that the third one provides a general mechanism for establishing the second one. This yields a unified framework for proving equivariant fibration theorems beyond the classical compact Lie group setting.

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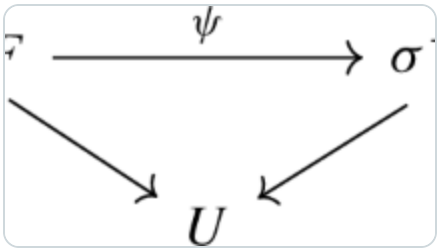

The equivariant covering homotopy property

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Computing equivariant matrices on homogeneous spaces for geometric deep learning and automorphic Lie algebras

Article | Open access

11 April 2024

Data availability

Not applicable.

Code availability

Not applicable.

Materials availability

Not applicable.

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Contributions

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Ethics declarations

Conflict of interest

The author has no conflict of interest to declare that are relevant to the content of this article.

Ethical approval and consent to participate

Not applicable.

Consent for publication

The author consents to the publication of this paper.

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