



Covariant Mickelsson-Faddeev extensions of gauge and diffeomorphism algebras

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We construct new extensions of current and diffeomorphism algebras in $N > 3$ dimensions, which are related to the Mickelsson-Faddeev algebra. The result is compatible with Dzhumadil'daev's classification of diffeomorphism cocycles. We also construct an extension of the current algebra in $N \geq 5$ dimensions which depends on the fourth Casimir operator.

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