

Title: The Schur multiplier and stem covers of Leibniz n -algebras

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Given a free presentation $0 \rightarrow \mathcal{R} \rightarrow \mathcal{F} \xrightarrow{\rho} \mathcal{G} \rightarrow 0$ of a Leibniz n -algebra \mathcal{G} , the quotient $\frac{\mathcal{R} \cap [\mathcal{F}, \dots, \mathcal{F}]}{[\mathcal{R}, \mathcal{F}, \dots, \mathcal{F}]}$ is known as the Schur multiplier of \mathcal{G} . In the article, we construct a four-term exact sequence relating the Schur multiplier of \mathcal{G} and \mathcal{G}/\mathcal{N} , from which we derive some formulas concerning dimensions of the underlying vector spaces of the corresponding Schur multipliers. Additionally, this exact sequence is useful to characterize nilpotency of Leibniz n -algebras. Finally, we characterize stem covers of Leibniz n -algebras, showing their existence in case of finite dimension. We also analyze the interaction between stem covers of Leibniz n -algebras and the Schur multiplier.

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