

The universal central extension of the Lie algebra of exact divergence-free vector fields

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The goal of the talk is proving a conjecture of Claude Roger about the universal central extension of the Lie algebra of volume-preserving vector fields. In the beginning we will briefly review the notion of central extensions of Lie algebras and their link to Chevalley-Eilenberg-cohomology. We will then proceed to Roger's conjecture, which lies in the (continuous) infinite-dimensional setting. To solve it we will need a combination of analytical and geometrical methods, and maybe even a bit of representation theory.

Based on an ongoing collaboration with Bas Janssens and Cornelia Vizman.

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