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K. Bowman

Dept. of Physics, Astronomy and Mathematics, University of Central Lancashire, Preston
PR1 2HE, England

D. A. Towers

Dept. of Mathematics, Lancaster University, Lancaster LA1 4YF, England

V. R. Varea

Dept. of Mathematics, University of Zaragoza, Zaragoza 50009, Spain

On Flags and Maximal Chains of Lower Modular Subalgebras of Lie Algebras

We study the class \mathcal{F} of Lie algebras having a flag of subalgebras, and the class Ch_{lm} of Lie algebras having a maximal chain of lower modular subalgebras. We show that $\mathcal{F} \subseteq Ch_{lm}$ and that both are extensible formations that are subalgebra closed. We derive a number of properties relating to these two classes, including a classification of the algebras in each class over a field of characteristic zero.

Keywords: Lie algebras, flags of subalgebras, maximal chains of subalgebras, lower modular subalgebras, quasi-ideals.

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