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Strategies for linear rewriting systems: link with parallel rewriting and involutive divisions

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In this talk, I will present a joint work with Maxime Lucas [1]. It concerns rewriting systems whose underlying set of terms is equipped with vector space operations. In [1], we introduce parallel rewriting relations, which are rewriting relations compatible with the vector space operations, as well as rewriting strategies, which consist in choosing one rewriting step for each reducible basis element of the space. I will illustrate this framework with rewriting systems over rational Weyl algebras. In particular, I will relate involutive divisions to rewriting strategies over rational Weyl algebras, and explain how involutive sets induce confluent rewriting systems over rational Weyl algebras using strategies.

Keywords
Confluence, parallel rewriting, rewriting strategies, involutive divisions.

References
[1] C. CHENAVIER, M. LUCAS, *Strategies for linear rewriting systems: link with parallel rewriting and involutive divisions*. arXiv:2005.05764.