

## On the Arithmetic of $p$ -adic Continued Fractions

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The well-known best-approximation property of real continued fractions has led researchers to develop an arithmetic for continued fractions, allowing operations such as addition and multiplication. In 1972, Gosper provided an algorithm to perform such operations

In this talk, we present recent results on the arithmetic of  $p$ -adic continued fractions. We focus on the Möbius transformations of the Ruban and Browkin I  $p$ -adic continued fractions. We introduce an algorithm to compute the partial quotients of these Möbius transformations in the  $p$ -adic setting, and we discuss how this differs from the real case.

Joint work with Giuliano Romeo.