

The cyclic sliding operation in Garside groups

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Abstract

We present a new operation to be performed on elements in a Garside group, called cyclic sliding, which is introduced to replace the well known cycling and decycling operations. Cyclic sliding appears to be a more natural choice, simplifying the algorithms concerning conjugacy in Garside groups and having nicer theoretical properties. We show, in particular, that if a super summit element has conjugates which are *rigid* (that is, which have a certain particularly simple structure), then the optimal way of obtaining such a rigid conjugate through conjugation by positive elements is given by iterated cyclic sliding.

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