

Formally reversible maps of \mathbb{C}^2

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Abstract. An element g of a group is called *reversible* if it is conjugate in the group to its inverse. This paper is about reversibles in the group $\mathcal{G} = \mathcal{G}_2$ of formally invertible pairs of formal power series in two variables, with complex coefficients. The main result is a description of the generic reversible elements of \mathcal{G}_2 . We list two explicit sequences of reversibles which between them represent all the conjugacy classes of such reversibles. We show that each such element is reversible by some element of finite order, and hence is the product of two elements of finite even order. The elements that may be reversed by an involution are called *strongly reversible*. We also characterise them.

We draw some conclusions about generic reversibles in the group $\mathcal{G} = \mathcal{G}_2$ of biholomorphic germs in two variables, and about the factorization of formal maps as products of reversibles. Specifically, we show that each product of reversibles reduces to the product of five.

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