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Induced Cat^1 -groups

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Abstract: In this paper we define the pullback cat^1 -group and show that this Pullback has a right adjoint which is the induced cat^1 -group. Later we show that this right adjoint is a pushout of category of cat^1 -groups. We calculate the Peiffer subgroups to find a finite group of the source of induced cat^1 -groups. The generating set of Peiffer subgroups are also given in this paper. All results are corrected by a GAP [13] program package in [4]. This paper also contains the some computational examples which are the calculation-induced cat^1 -group and comparative times between the induced crossed modules and induced cat^1 -groups.

Key Words: Pullback, Crossed module, Cat^1 -group, induced crossed modules, induced cat^1 -groups, Peiffer commutators, cocomplete, GAP.

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