

$$G' = \cdots *_A G_{-1} *_A G_0 *_A G_1 *_A \cdots$$

A commutative diagram illustrating the relationship between the group  $G'$  and a sequence of groups  $G_{-1}, G_0, G_1, \dots$ . The top row consists of the groups  $G_{-1}, G_0, G_1, \dots$  connected by multiplication by  $A$ , indicated by the  $*_A$  symbols. The bottom row consists of the group  $A$  repeated for each  $G_i$ . Arrows labeled  $\alpha_1$  point from each  $A$  to the corresponding  $G_i$  in the top row. Arrows labeled  $\alpha_2$  point from each  $G_i$  to the next  $G_{i+1}$  in the top row. The entire sequence is equated to  $G'$  on the left.