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# Finiteness of $A_n$ -equivalence types of gauge groups

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Let  $B$  be a finite CW complex and  $G$  a compact connected Lie group. We show that the number of gauge groups of principal  $G$ -bundles over  $B$  is finite up to  $A_n$ -equivalence for  $n < \infty$ . As an example, we give a lower bound of the number of  $A_n$ -equivalence types of gauge groups of principal  $SU(2)$ -bundles over  $S^4$ .

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