

# Imbalance of the $O(3)$ theory and the $N=1$ model

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## Abstract

In this paper, we study the  $O(3)$  theory and the  $N=1$  model with the  $O(3)$  symmetry group. The analysis of the  $O(3)$  theory is performed by using the modified Poincaré group and the modified Kähler group. We find that both of them are equivalent to the  $O(3)$  theory with the  $O(3)$  symmetry group.