

Revisiting the axial anomaly: from pseudotensor mesons to the pseudoscalar glueball

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The axial anomaly is responsible for the masses and mixing of the mesons η and η' (especially the latter). An open question is if it affects also other sectors of hadronic phenomenology. We show that anomalous terms can be important to understand the spectroscopy of pseudotensor mesons $\eta_2(1645)$ and $\eta_2(1870)$ (which can be investigated in the GlueX experiment at Jefferson Lab). Moreover, the axial anomaly can be also coupled to baryons (within the mirror assignment), explaining the large decay width $N^*(1535) \rightarrow N\eta$. Finally, the axial anomaly is naturally related to the pseudoscalar glueball: coupling of the latter to mesons and baryons are analyzed. The hope is to single out some channels where the pseudoscalar glueball can be looked for in the ongoing BESIII and the future PANDA experiments.

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