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An updated view on the Atomki anomalies

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In view of the latest experimental results recently released by the ATOMKI collaboration, we critically re-examine the possible theoretical interpretation of the observed anomalies in terms of a new BSM boson X with mass ~ 17 MeV. Employing a multipole expansion method, we estimate the range of values of the nucleon couplings to the new light state in order to match the experimental observations. Our conclusions identify the axial vector state as the most promising candidate, while other spin/parity assignments seem disfavored for a combined explanation.

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