

The muon $g-2$ anomaly confronts new physics in $\Upsilon^+ \Upsilon^-$ and $\Upsilon^+ \Upsilon^-$ final states scattering

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The 4.2σ discrepancy between the theoretical prediction for the muon $g-2$ and the experimental results is accompanied by other anomalies. Determinations of the hadronic cross section from KLOE and BaBar, a crucial input for the data-driven prediction, disagree by almost 3% . Furthermore, the data-driven result disagrees with the most precise lattice determination by 2.1% . In this talk I will discuss how all these discrepancies could be accounted for by a new boson produced resonantly around the KLOE centre of mass energy and decaying promptly in $\Upsilon^+ \Upsilon^-$ or $\Upsilon^+ \Upsilon^-$ pairs.

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