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Pseudoscalar contribution to the muon g-2

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In their 2004 paper, Melnikov and Vainshtein derive a short-distance constraint for the pseudoscalar-pole light-by-light four-point function. To satisfy this constraint, Melnikov and Vainshtein dropped the pseudoscalar transition form factor at the vertex where the external photon is hooked. We present a way to satisfy the short-distance constraint of Melnikov and Vainshtein with an infinite sum over radially-excited pseudoscalar-pole diagrams (without dropping the singly-virtual transition form factor). For this, we develop a suitable model for the pseudoscalar transition form factor. We compare our result for the pseudoscalar-pole contribution to the muon g-2 with the literature values. In addition, a prediction of the Schwinger sum rule for the pseudoscalar contribution is presented.

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