

Problems 5

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1. Compute the VVV, VAA, and AAA anomalies. (Only the last is non-zero.) From these, define and compute LLL and RRR anomalies. Show that the cancellation of LLL + RRR contributions implies no anomalies, thus justifying the discussion in class.
2. Consider the meson mass matrix without assuming $m_u = m_d$ or a special limits of f/F . What general conclusions can you draw about the (unacceptable) spectrum?
3. Derive the effective vertex for B violation through the $SU(2)$ anomaly in the standard model, similar to the vertex for $U_A(1)$ violation in QCD derived in class.