Light Quark Masses

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Abstract

Based on the general form of the first correction to the current algebra result for the masses of pseudoscalar mesons, we obtain a number of sum rules relating the masses of pseudoscalars to the light quark mass ratios mu/md, ms/md. A more careful consideration involving experimental data on $\eta \to 3\pi$ decays allows us to identify a region in which the results of these sum rules do not contradict each other. This determines the range of acceptable values for the ratios $mu/md/ms$. Finally, the results are compared with known phenomenological data and lattice simulations.