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Chiral Extrapolation of Light Mesons from the Lattice¹ BIN HU, MICHAEL DORING, MAXIM MAI, RAQUEL MOLINA, ANDREI ALEXANDRU, George Washington Univ — The $\rho(770)$ meson is the most extensively studied resonance in lattice QCD simulations in two ($N_f = 2$) and three ($N_f = 2 + 1$) flavors. We analyze all available phase shifts from $N_f = 2$ simulations using unitarized Chiral Perturbation Theory (UCHPT), and allowing not only for the extrapolation in mass but also in flavor, $N_f = 2 \rightarrow N_f = 2 + 1$. The flavor extrapolation requires information from a global fit to $\pi\pi$ and πK phase shifts from experiment. In the chiral extrapolations of $N_f = 2$ simulations, the $K\bar{K}$ channel has a significant effect and leads to $\rho(770)$ masses surprisingly close to the experimental one. We also discuss recent results on the chiral extrapolations of $N_f = 2 + 1$ lattice QCD data of the $\rho(770)$ meson and the $\sigma(600)$ that have become available.

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