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Unquenching and unitarising mesons in quark models and on the lattice

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Modern approaches to mesons and baryons go beyond the traditional description in terms of pure valence quark-antiquark or three-quark systems confined by some infinitely rising interquark potential inspired by QCD. As most hadrons are broad to very broad resonances, with decay widths often of the same order of magnitude as the average level splittings, pretending that they are stable systems is a gross approximation. This was recognised and dealt with long ago in a couple of unitarised quark models, and more recently also in lattice calculations.

In this context, I shall discuss the concepts of unquenching and unitarisation for mesons in quark models and on the lattice in a historical perspective, presenting old and recent results that appear to converge towards a better common understanding of the meson spectrum.

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