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Quark mass in backreacted holographic QCD

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QCD has an interesting dependence on the quark mass, in particular near the edge of the conformal window at large N_f . This can be studied by using holographic bottom-up models for QCD in the Veneziano limit (V-QCD) where the flavor fully backreacts to the glue. I will sketch the phase diagram as a function of the quark mass and $x=N_f/N_c$, and discuss phenomena such as the hyperscaling relations of the meson masses and the discontinuity of the S-parameter in the conformal window. I will show how the phase diagram in the presence of a double trace deformation $\sim(\bar{q}q)^2$ is obtained.

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