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## Approaching the conformal window: systematic study of the particle spectrum in $SU(2)$ field theory with $N_f = 2, 4$ and 6.

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It is expected that  $SU(2)$  gauge theory with  $N_f$  fundamental fermions has an infrared fixed point when  $N_f$  is between  $\sim 6$  and 11. We study the hadron spectrum and scale setting in  $SU(2)$  gauge field theory with  $N_f = 2, 4, 6$  using hypercubic stout smeared Wilson-clover (HEX) action. The case  $N_f = 2$  is QCD-like, whereas  $N_f = 6$  is close to the lower edge of the conformal window. In our study length scales are determined by using gradient flow approach.

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