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## The $U_A(1)$ breaking in the chiral limit of two-flavour QCD

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We study the strength of the anomalous breaking of the  $U_A(1)$  symmetry in the chiral limit of two-flavour QCD at the transition temperature using the difference of the pseudoscalar and scalar iso-vector screening masses. To this end we use simulations with non-perturbatively  $O(a)$ -improved Wilson fermions for three different pion masses in the range of 200-550MeV on lattices with a temporal extent of 16 and volumes of  $32^3$  to  $64^3$ . We compare our results to the strong breaking at zero temperature and find that the effect of the breaking in the mass difference is reduced by at least a factor of five. This indicates a weak  $U_A(1)$  breaking at the transition temperature and raises the question of its influence on the nature of the chiral transition. It is generally expected that a weaker breaking strenghtens the chiral phase transition.

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