

# Dynamical Wilson twisted mass fermions: A scaling analysis

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This talk is based on reference [1] and is one of four contributions about  $N_f = 2$  dynamical twisted mass fermions which are summarized in ref. [2]. This common contribution covers three different gauge actions, namely the standard Wilson plaquette gauge action investigated here, the DBW2 [2,3] and the tree-level improved Symanzik [4] gauge action. In addition, first results are compared to next-to-leading order chiral perturbation theory formulae.

## References

[1] F. Farchioni *et al.*, *Lattice spacing dependence of the first order phase transition for dynamical twisted mass fermions*, hep-lat/0506025.

[2] F. Farchioni *et al.*, *Dynamical twisted mass fermions*, PoS(LAT2005)072.

[3] N. Ukita *et al.*, *Scaling test of dynamical Wilson twisted mass fermions with DBW2 gauge action*, PoS(LAT2005)037.

[4] U. Wenger *et al.*, *Lattice QCD with  $N_f = 2$  light Wilson fermions: the phase structure and scaling*, PoS(LAT2005)044.

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