Fourier Accelerating RHMC for the Overlap Top-Higgs

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For the purpose of studying the top-Higgs Yukawa model, we employ the RHMC algorithm with chiral overlap formulation. We have found that implementing the overlap in Fourier space, rather than the usual Zolotarev-based method required when working with a gauge field, is effective and lends itself easily to the technique of Fourier acceleration. This is fortunate, as we have also found that without Fourier acceleration, the system’s autocorrelations are formidable, on the order of 100 MD time units for some sets of parameter values.