



Figure S2: RMSD (left panel) and mean bias (right panel) for estimating  $F_{ST}$  at 2X sequencing coverage. We compared the accuracy of the new method which does not rely on genotype calling ( $\hat{F}_{ST.Ev}$ ) and of two methods based on computing population allele frequency as the sample allele frequency with the highest posterior probability,  $\hat{F}_{ST.Ef1}$ , and as the expected allele frequency,  $\hat{F}_{ST.Ef2}$  (see Material and Methods). We simulated 20 individuals for each population and 10,000 sites for each scenario.