



**Figure S2** The linked method more accurately measures selection in passenger loci observed to undergo fixation. Mean inferred selection coefficients, in units of  $2N\sigma$ , assigned to loci from simulations with  $T = 500$ ,  $n_g = 100$ , and  $dt_s = 100$ , for various values of the underlying selection coefficient  $\sigma$ , calculated from the models excluding linkage (purple), and including linkage (blue). The correct value in each case is zero. More than 800 inferred selection coefficients are represented by each data point. A similar relationship between selection coefficients is observed for different values of the parameters  $T$ ,  $n_g$ , and  $dt_s$ .