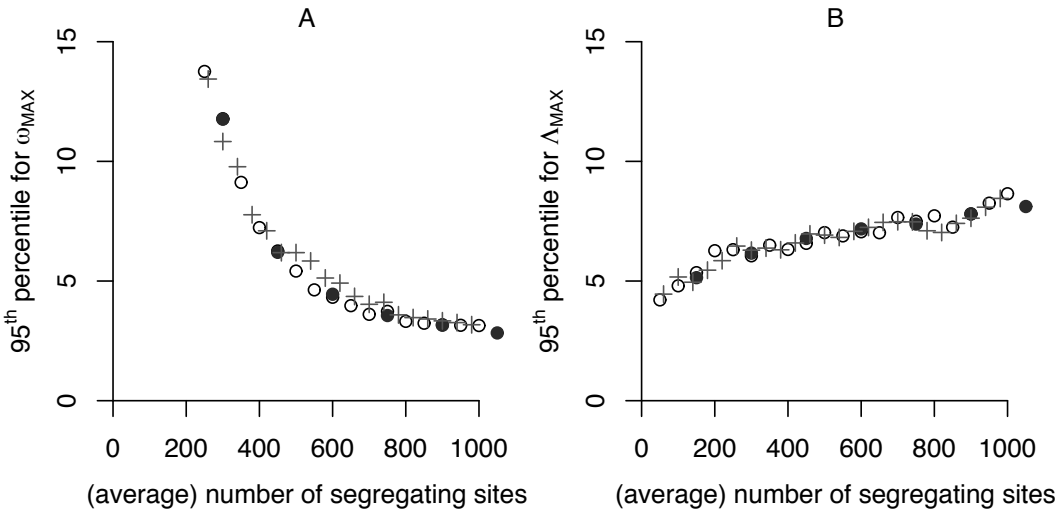

FIGURE S2.– The 95^{th} percentile for (A) the ω-statistic and (B) *SweepFinder* based on the $F\theta$ (filled circles), the FS (open circles) and the $F\theta S$ procedures (crosses). Equilibrium neutrality simulations have been performed for a 50-kb genomic segment and 12 sequences ($h_n \approx 3$). Recombination rate is 0.05/bp. For a given number of segregating sites (x-axis) simulations were performed by (i) fixing the number of segregating sites S_n (open circles), (ii) using $\theta_{\rm NEU} = \theta_{\rm W} = \frac{S_n}{h_n}$ (filled circles). In this case simulations generate on average S_n segregating sites. (iii) Under the $F\theta S$ process (crosses) we used the same $\theta_{\rm NEU} = \theta_{\rm W} = \frac{S_n}{h_n}$ but only the realizations that produced S_n segregating sites.