File S3: Stability regions of DMI equilibria in the diploid model

In this section of the OS, we show the DMI pattern for several different diploid models. All plots show the scaled maximum migration rates for local stability (solid lines) and the areas of global stability (shaded) against the scaled strength of the incompatibility, γ/α – similar to figure 3, but on a slightly different scale. The data was obtained numerically using the functions in the *Mathematica* OS. For better comparison, plots of the haploid and the recessive and codominant diploid model treated in the main text are also included.

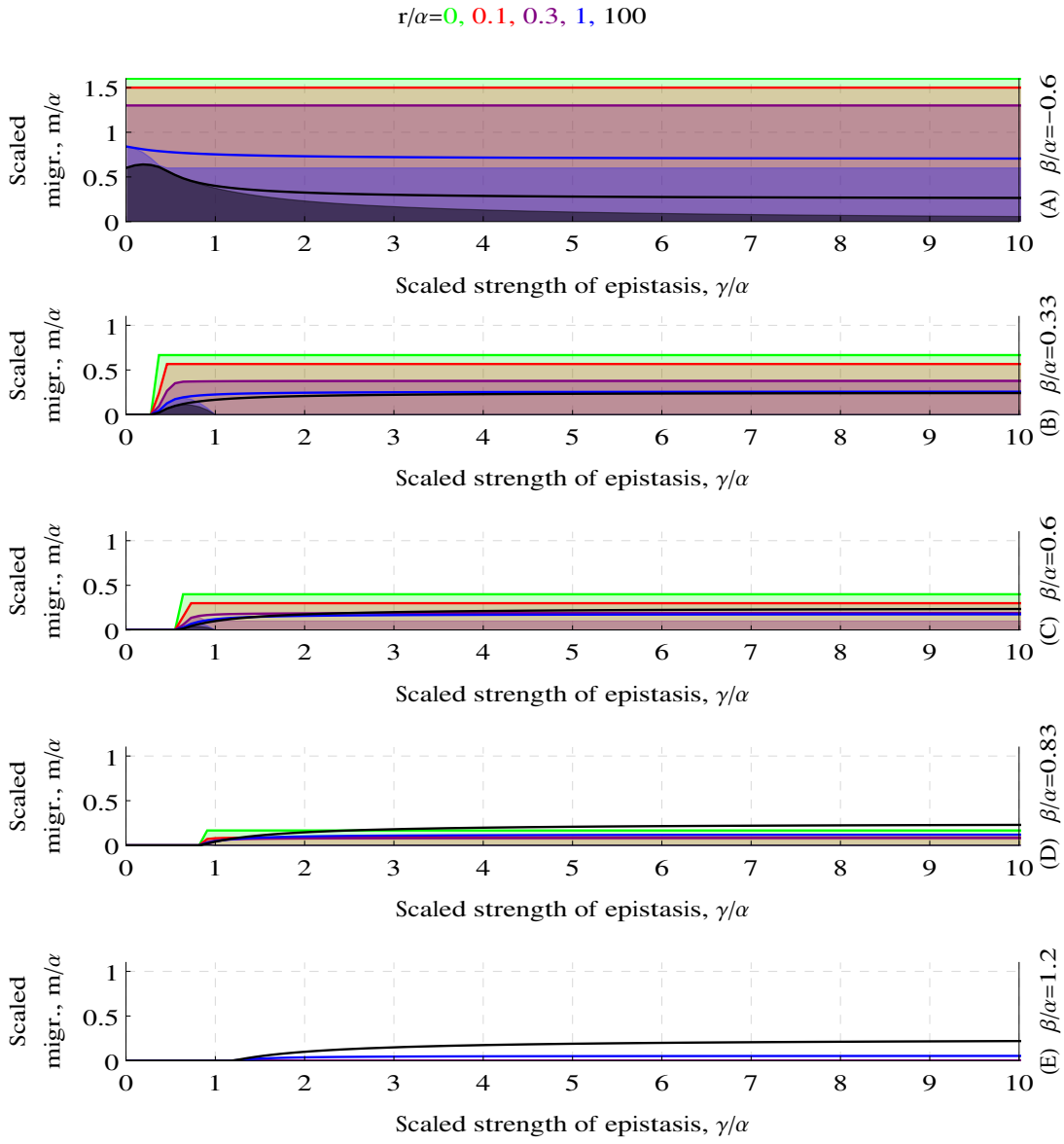

Figure S1: Haploid model

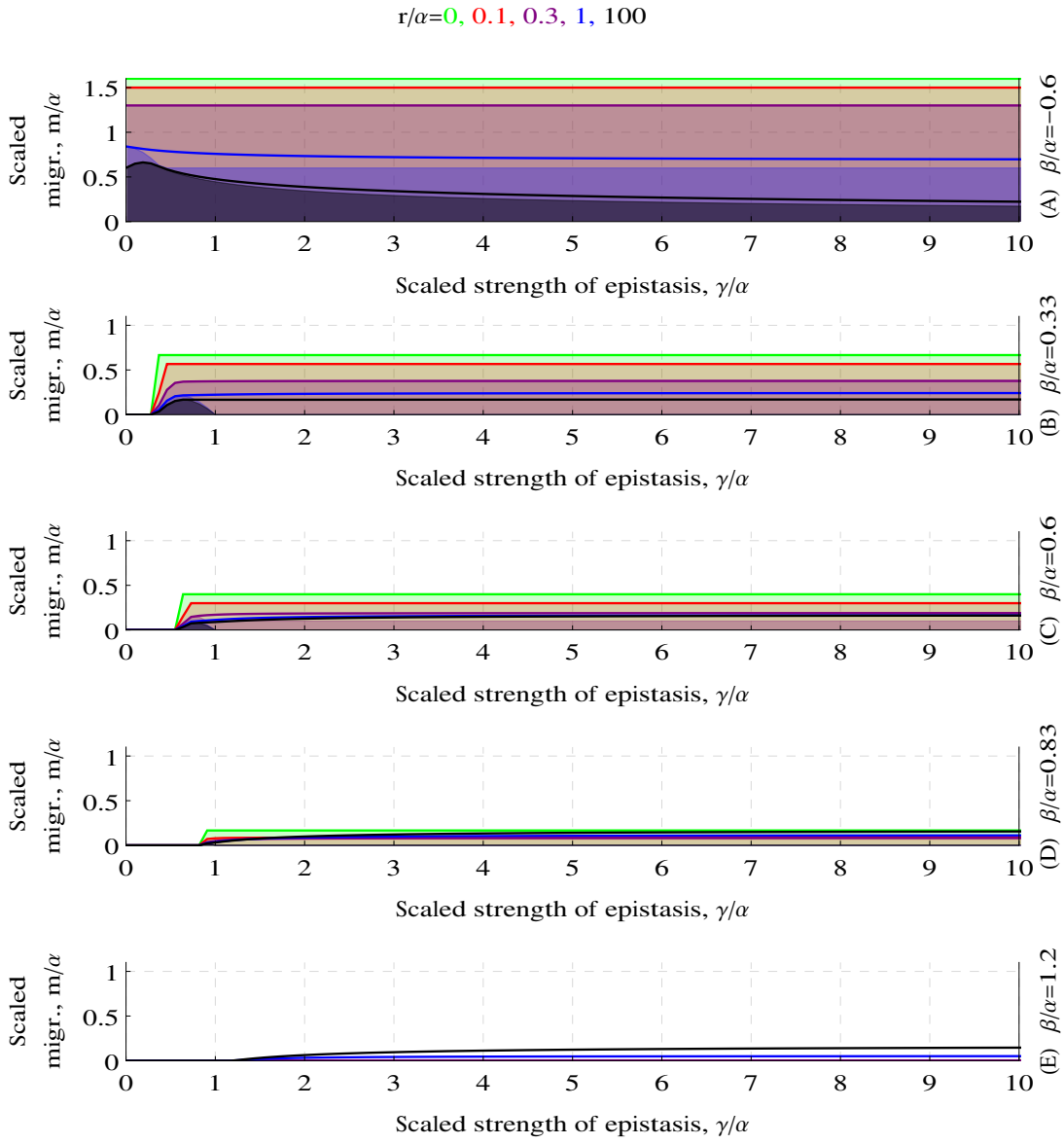

Figure S2: Recessive model, $\Gamma = (0, \gamma, \gamma, 2\gamma)$

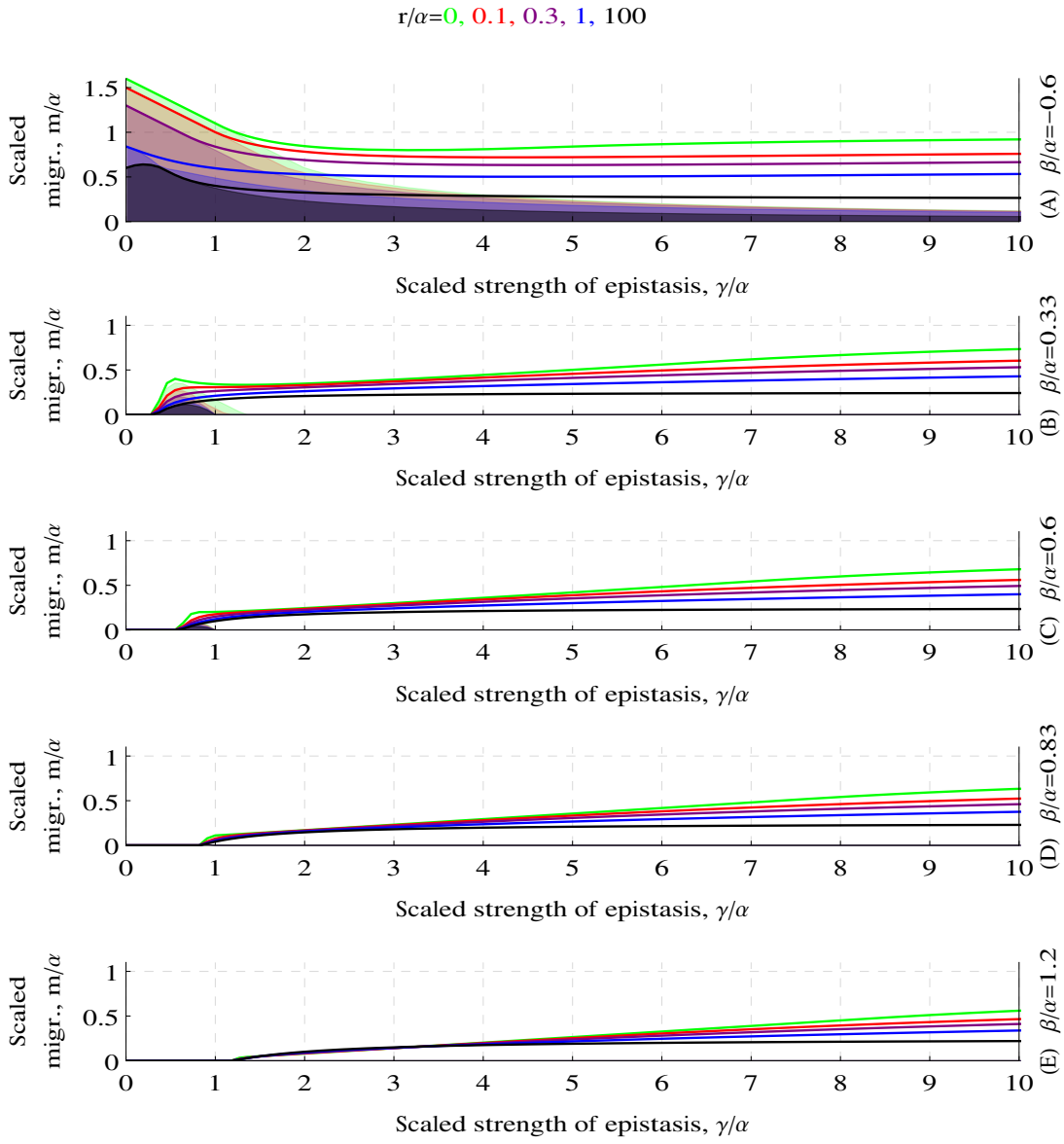

Figure S3: Codominant model, $\Gamma = (\gamma/2, \gamma, \gamma, 2\gamma)$.

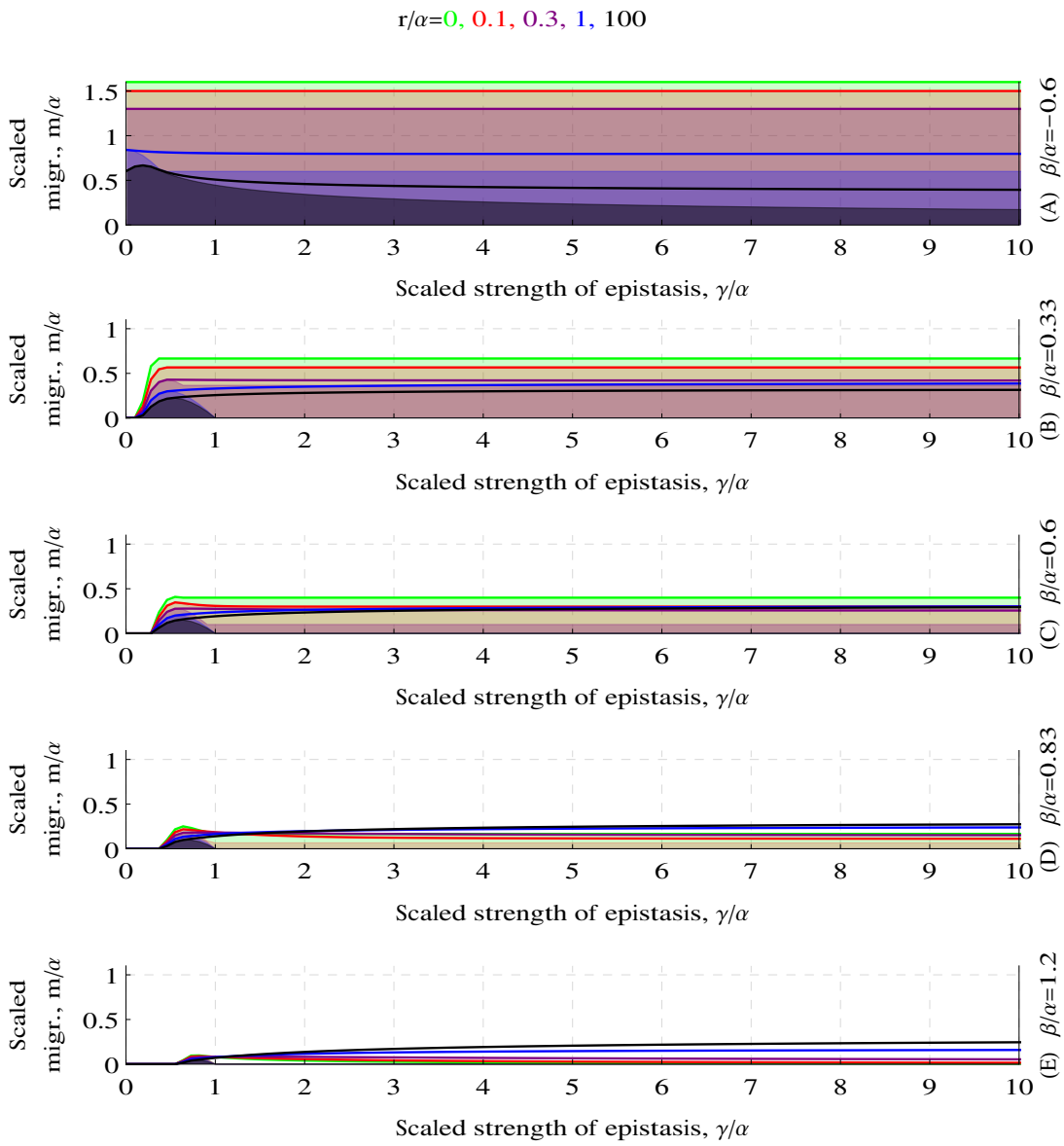

Figure S4: $\Gamma = (0, \gamma, 0, 2\gamma)$: very similar to $\Gamma = (0, \gamma, \gamma, 2\gamma)$ (see Fig. S2) and thus to the haploid case, but for $\beta > 0$ with overdominance at the $\mathcal{B}$ locus as soon as $2\gamma > \beta$. As a consequence, the minimal γ to maintain a stable DMI is reduced to $\beta/2$. Also, a globally stable DMI may exist even for $\beta > \alpha$, since the overdominant genotype $AABb$ is the fittest genotype for $\beta < 2\alpha$.

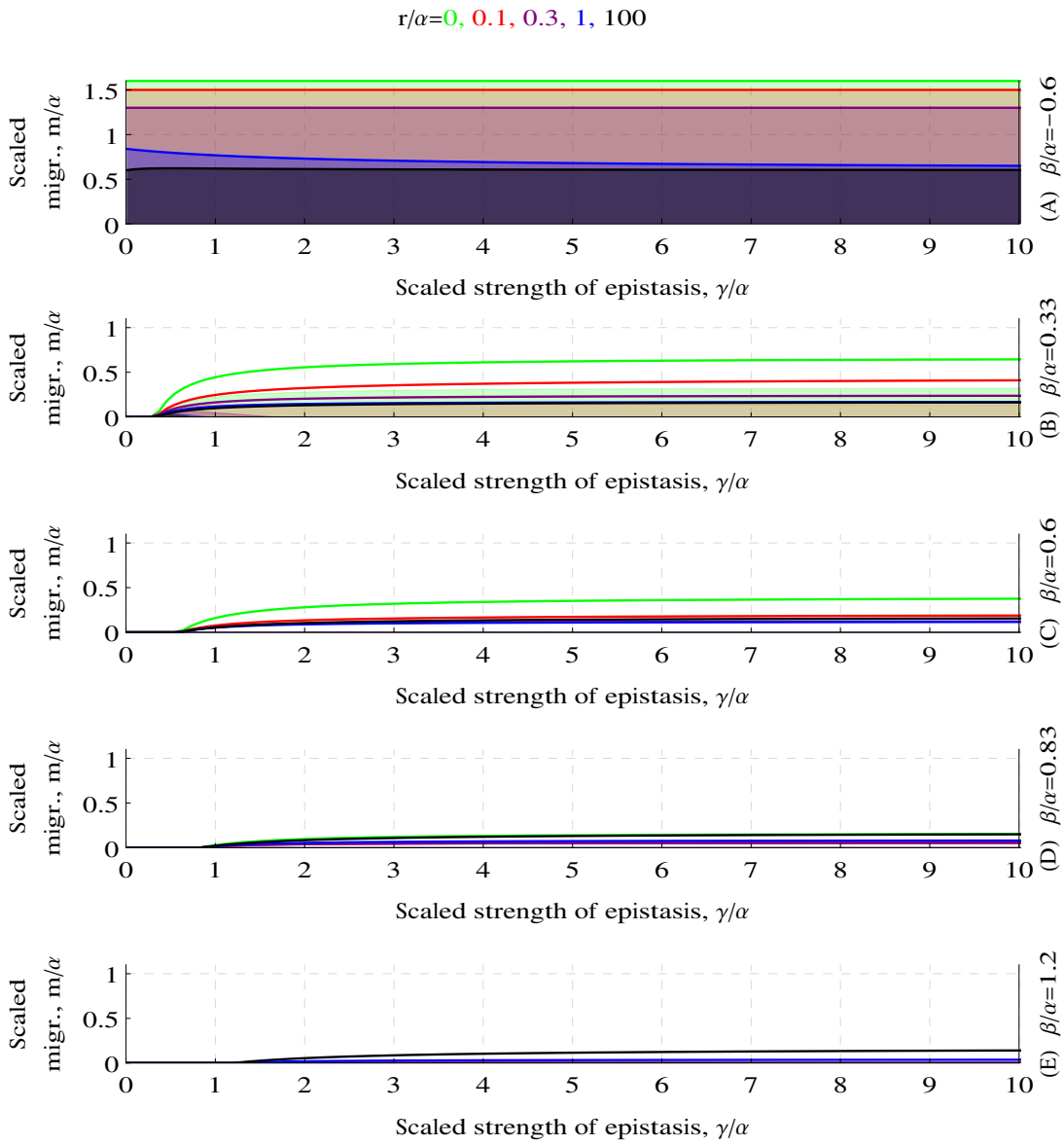

Figure S5: $\Gamma = (0, 0, \gamma, 2\gamma)$: still similar to $\Gamma = (0, \gamma, \gamma, 2\gamma)$ (see Fig. S2) and the haploid model, but now with overdominance at the $\mathcal{A}$ locus for $2\gamma > \alpha$. Due to the high fitness of the $AaBB$ genotype in this case, the stability regions for a DMI are somewhat reduced. In particular, global stability for $\beta > 0$ becomes more difficult.

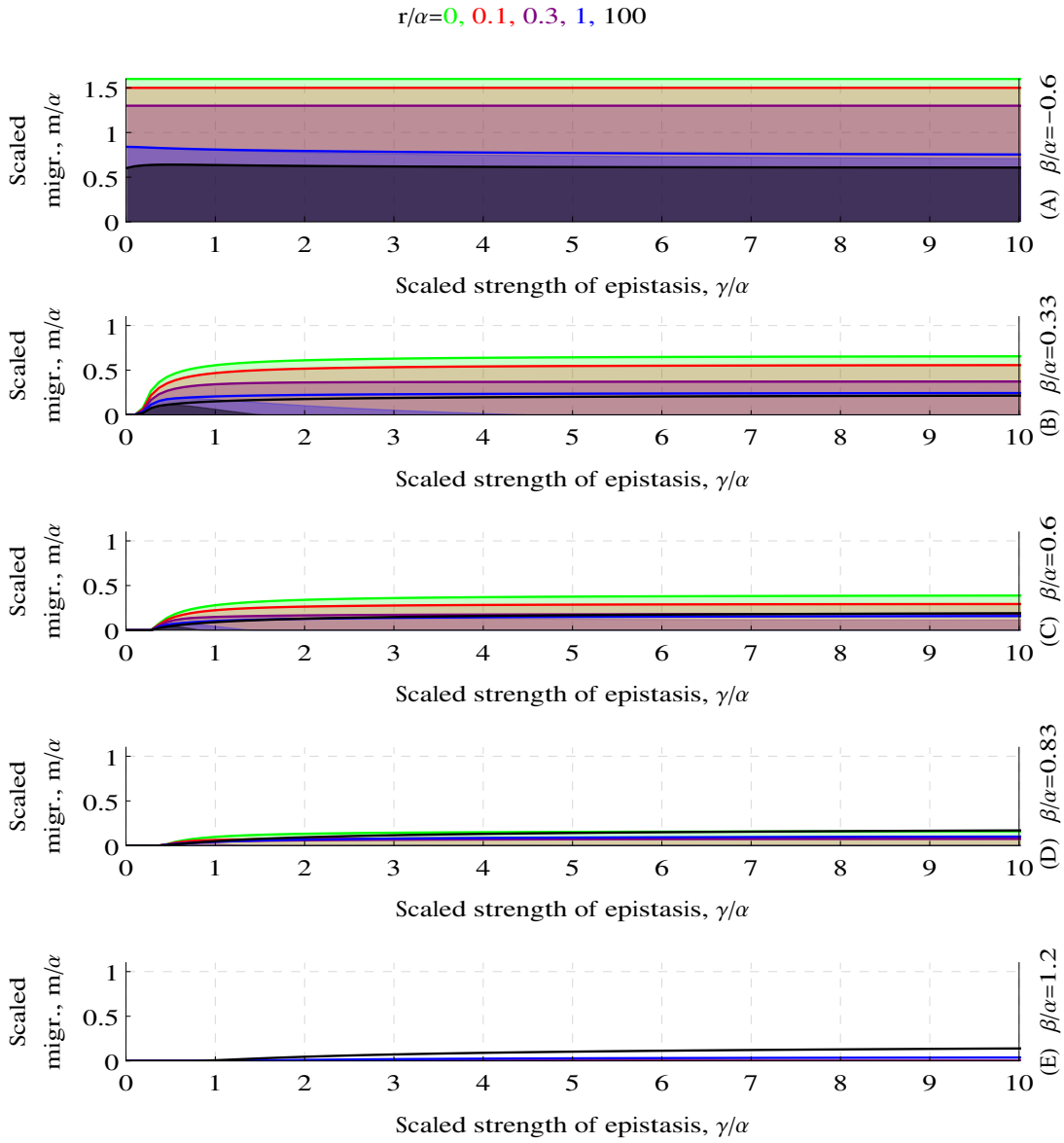

Figure S6: $\Gamma = (0, 0, 0, 2\gamma)$: the overdominance effects at the $\mathcal{A}$ locus (disfavoring DMIs) and at the $\mathcal{B}$ locus (favoring DMIs) partly cancel, resulting in stability regions that are once again similar to the haploid model (Figure S2).

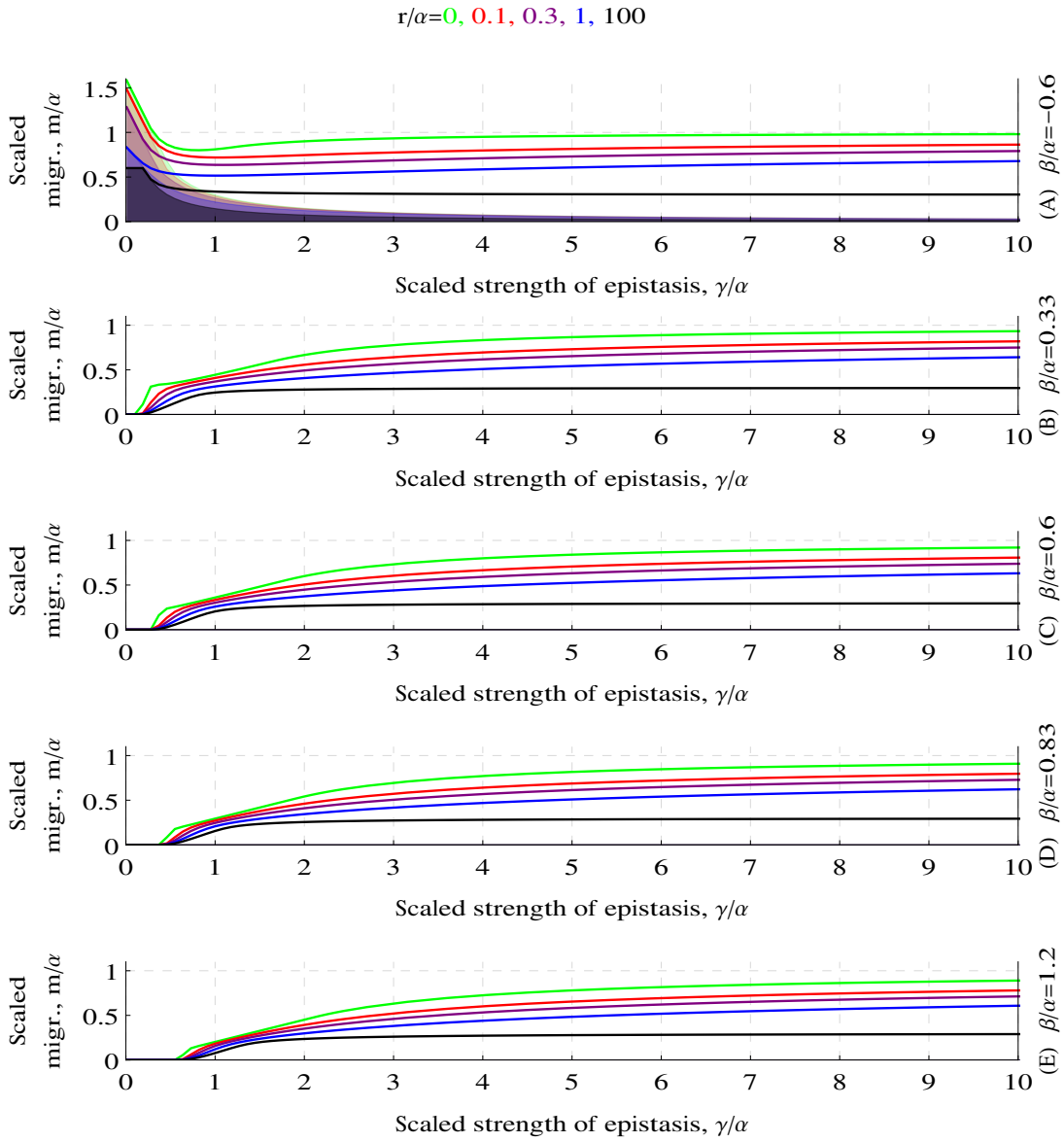

Figure S7: $\Gamma = (2\gamma, 2\gamma, 2\gamma, 2\gamma)$ (dominant DMI): very similar to the codominant case (see Fig. S3). For $\beta > 0$ and $\gamma > \beta/2$ underdominance at the $\mathcal{B}$ locus for $p_A = 1$. As a consequence, a DMI can never be globally stable for $\beta > 0$.

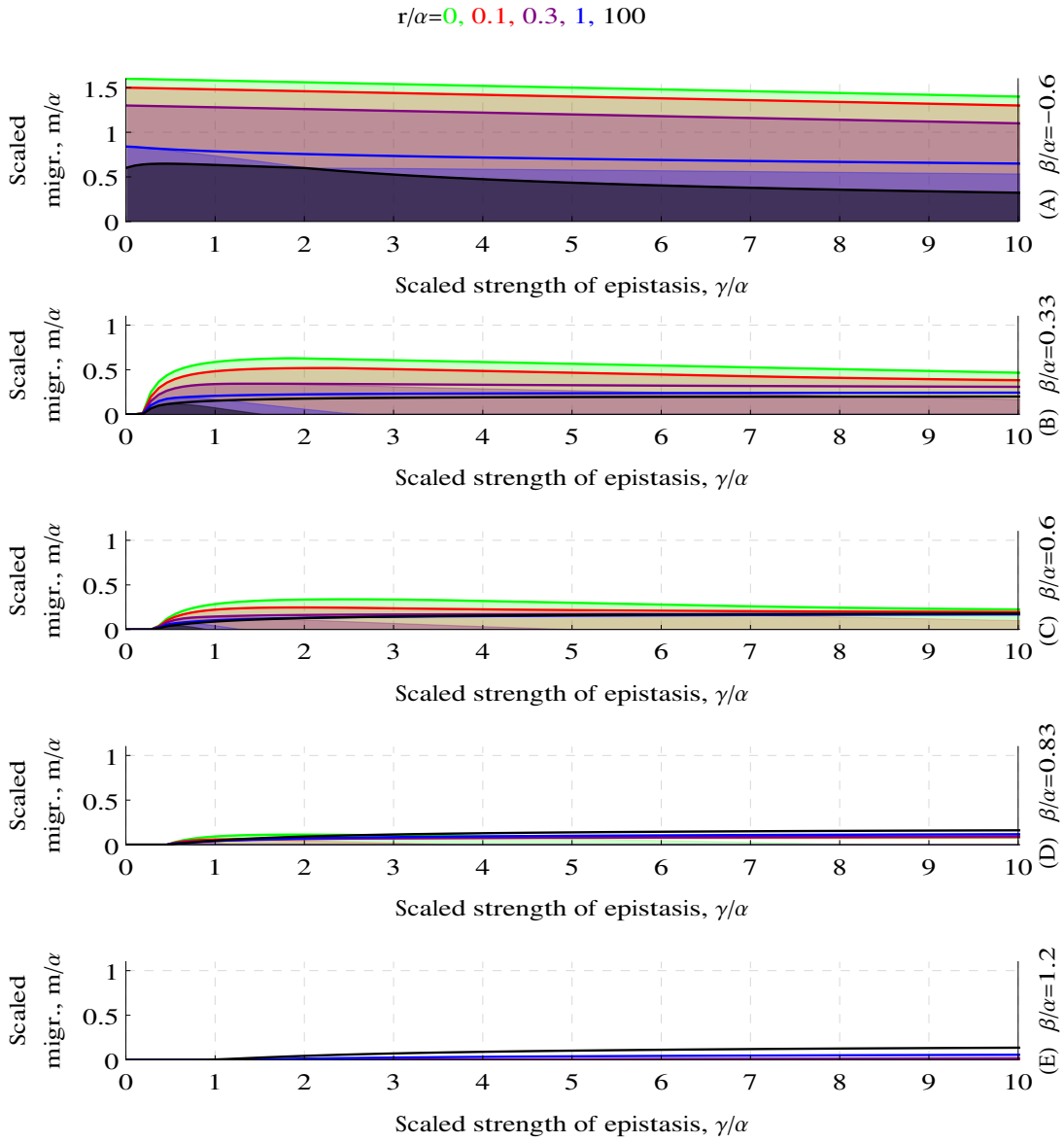

Figure S8: $\Gamma = (\gamma/50, \gamma/5, \gamma/5, 2\gamma)$: very similar to $\Gamma = (0, 0, 0, 2\gamma)$ (Fig. S6) and thus the haploid case (Figure S2).

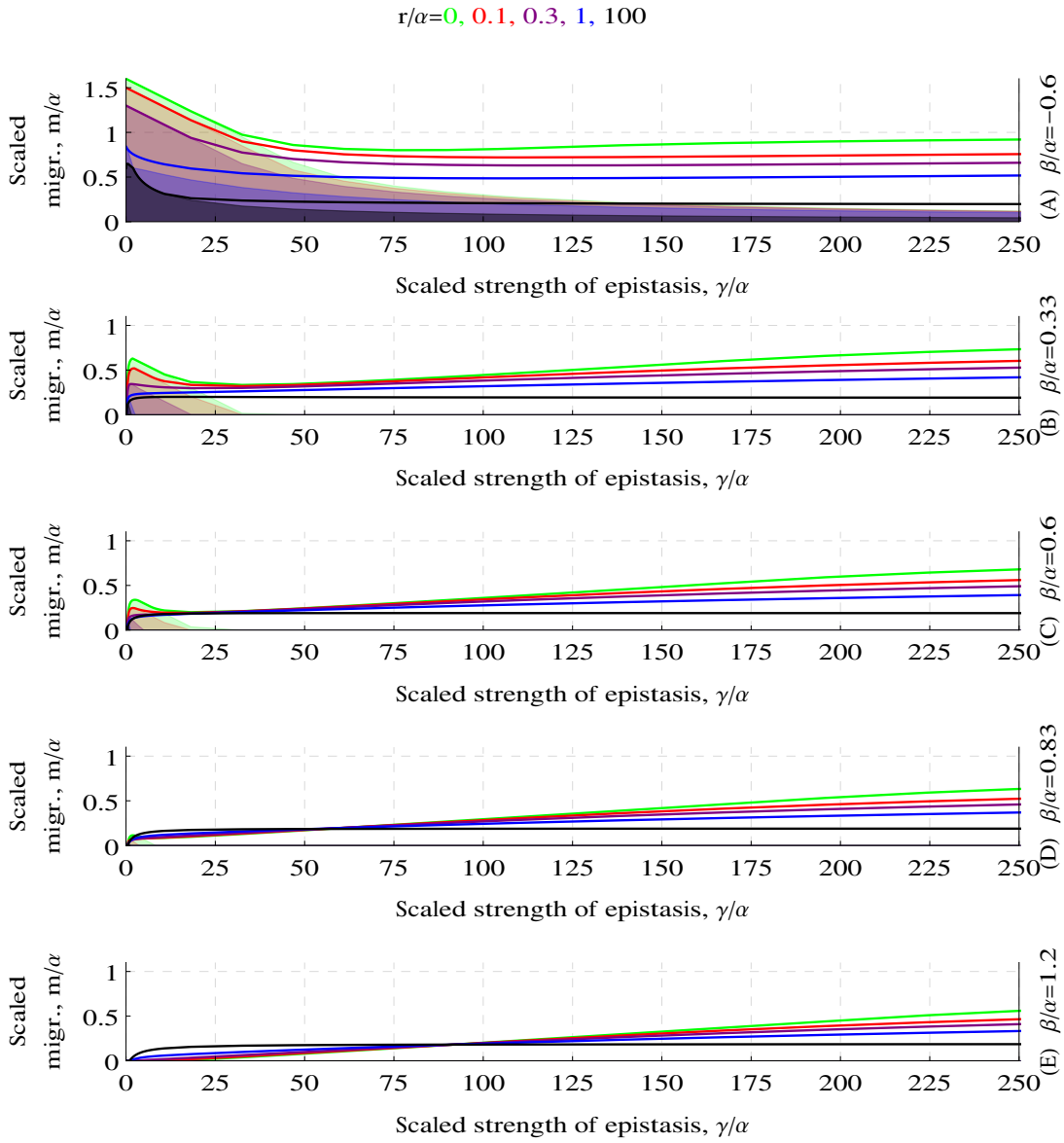

Figure S9: $\Gamma = (\gamma/50, \gamma/5, \gamma/5, 2\gamma)$ on a larger scale: Now the pattern looks very similar to the codominant model (Figure S3).