

 $\frac{20}{20}$ $\frac{40}{40}$ $\frac{60}{60}$ $\frac{80}{100}$ $\frac{100}{120}$ $\frac{120}{140}$ $\frac{140}{160}$ $\frac{180}{180}$ $\frac{180}{180}$ $\frac{1}{100}$ $\frac{1}{$

40000

20000

B @ alpha=10^-7.0

F @ alpha=10^-7.0 B @ alpha=10^-8.7

F @ alpha=10^-8.7

100000

50000

Figure 10: Sensitivity analysis with respect to initial whale populations and other parameters on the dynamical system from the second model.