# Files submitted as Supporting Information

We provide the functions that we used in order to plot Figure 10 in the paper. This figure contains three types of curves:

1. **Asymptotic curve** – in order to reproduce this curve, run the function "**stability_transitions_explicit_polynomial.m**," which uses the symbolic function "**finding_upsilon.m**." Note that the variable "Pol_multiplied" appearing on line 61 in "**stability_transitions_explicit_polynomial.m**," is the symbolic polynomial in $\delta$ and $\omega$, as given in eqs. (52) and (B11) in the paper. If one wishes to obtain it for a different set of parametric values $[A, \eta, \alpha, \beta]$ than in the presented case, which is [0.1 0.0118 1/3 1/3], one should replace the corresponding values on line 56, accordingly.

2. **Numerical HB solution** – in order to reproduce these curves, run the function "**finding_bifurcations_HB_numeric.m**," which uses the function "**hb_coefficients.m**." Note that all of the expressions appearing in "**hb_coefficients.m**" were found symbolically by using the function "**finding_upsilon.m**." One may set a different set of the parameter values by modifying the parameters on lines 4-8 in "**finding_bifurcations_HB_numeric.m**," accordingly. Note that the initial guess for omega appearing on line 12 in "**finding_bifurcations_HB_numeric.m**," depends on the parametric values on lines 4-8, and thus it should be updated accordingly in the case that these values are modified.

3. **Numerical curve** – in order to reproduce the dotted curves, run the function "**finding_bifurcations_numeric**," which uses the function "**poincare_map.m**" The interval of \omega and its bounds \omega_1 and \omega_2 appearing in **finding_bifurcations_numeric**" should be modified according to the parameter values of the simulation.