**Supplementary File 3.** Special Points from Bifurcation Analysis

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| --- | --- | --- | --- | --- |
| **Special Point** | **ε** | $$ρ$$ | **β** | **PI** |
| Branch Point | 0 | .01 | 0.176 | 0 |
| Hopf | 0 | .01 | 1.76 | 0.0133 |
| Branch Point | 0.0001 | .01 | 0.193 | 0 |
| Hopf | 0.0001 | .01 | 2.747 | 0.00944 |
| Branch Point✝ | 0.0025 | .01 | 0.615 | 0 |
| Branch Point | 0.0001 | 0 | 0.193 | 0 |
| Hopf | 0.0001 | 0 | 1.407 | 0.0156 |
| Branch Point | 0.0001 | .1 | 0.193 | 0 |
| Hopf | 0.0001 | .1 | 16.918 | 0.00178 |
| Branch Point✝ | 0.0001 | 1 | 0.193 | 0 |
| Note: All other parameters in this bifurcation analysis were fixed at the following values: *b* =.025 ;$μ=0.001$; $σ=\frac{1}{6}$ ; $α=\frac{1}{6}$ ; $c=0$ ✝For these scenarios with high antiviral rates (either induced, $ρ$, or constitutive, ε), no Hopf bifurcation was observed. |