Investigation into singularity formation in the Birkhoff-Rott Equation

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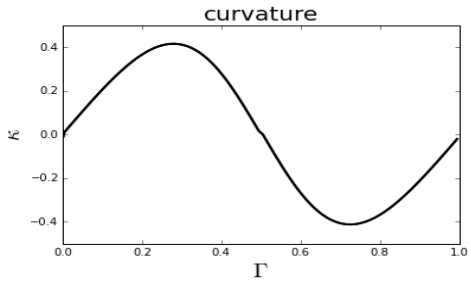
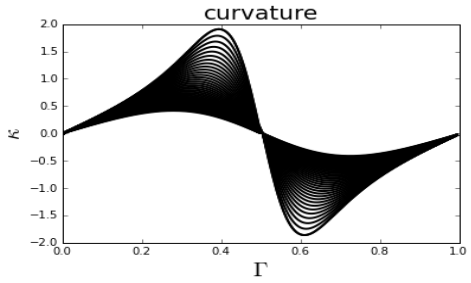
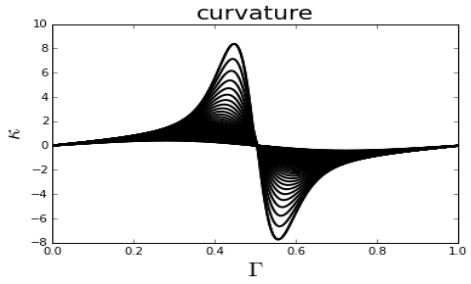
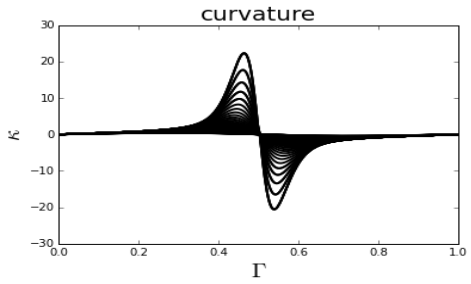
In this work we have computed the curvature, $x_{\Gamma\Gamma}, y_{\Gamma\Gamma}$ and the solution of our model . We trace the maximum and minimum point of the curvature in the solution and observe how that corresponds to the sharpening of the inner and outer curves, once we move past the critical time (experimentally determined $t_c = 0.54$). We also noticed that maximum and minimum points of the curbature move towards each other but once past the critical time, it doesn't fluctuate a lot.









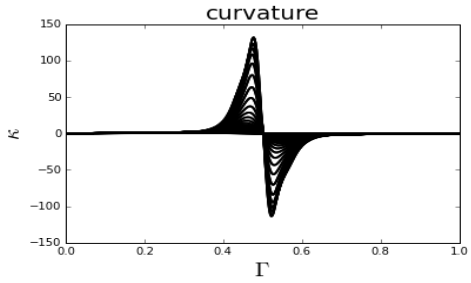
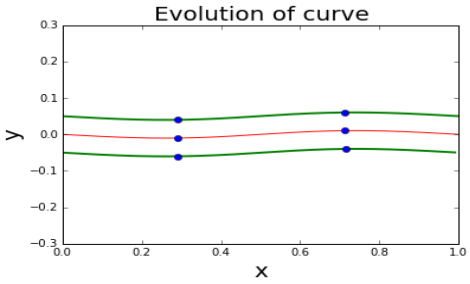
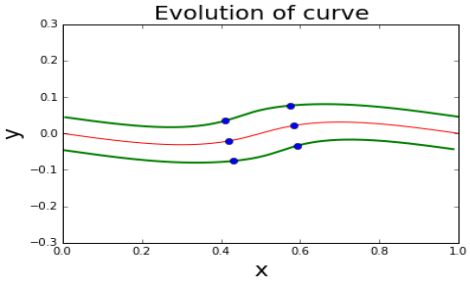
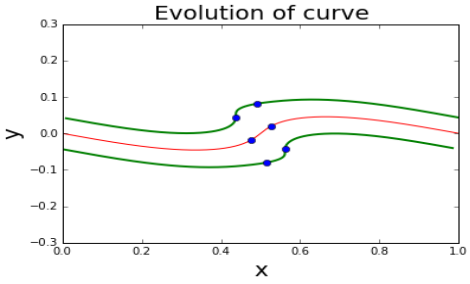
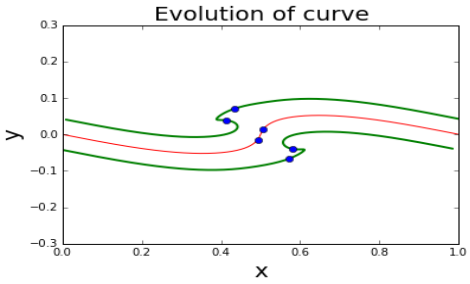


Figure 1: curvature withN=400 , $\delta = 0.1$, at $T = 0, 0.4, 0.54.6, 0.7$









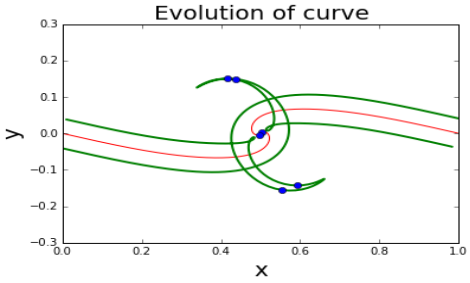
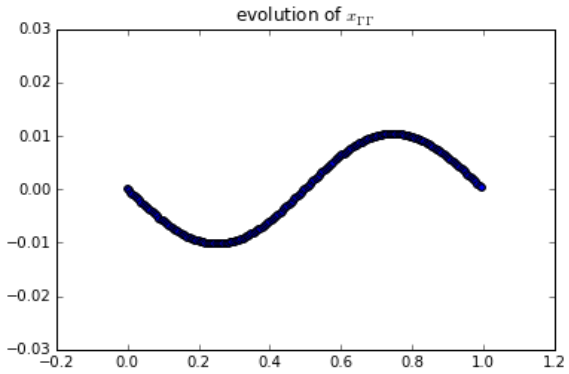
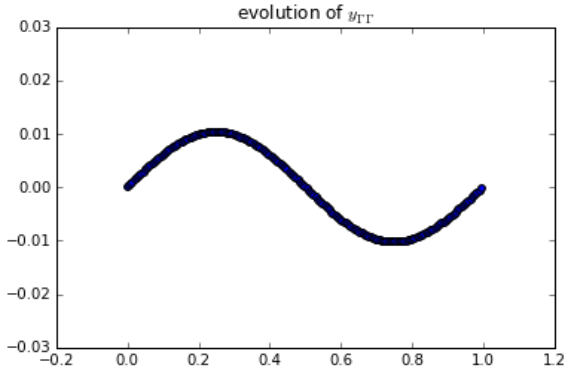
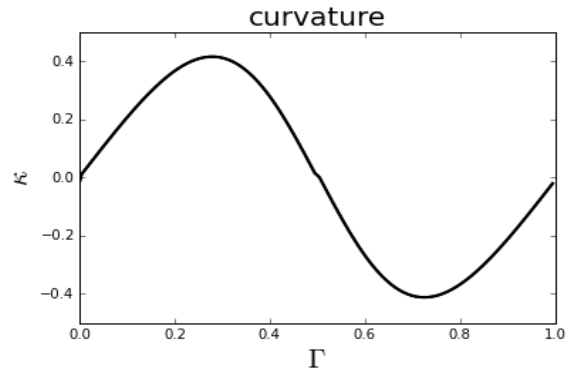


Figure 2: curve withN=400 , $\delta = 0.1$, at $T = 0, 0.4, 0.54.6, 0.7$







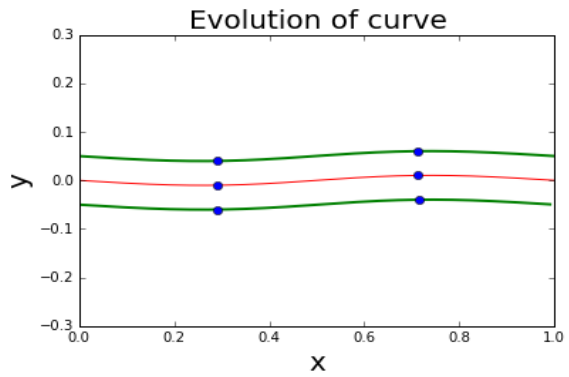
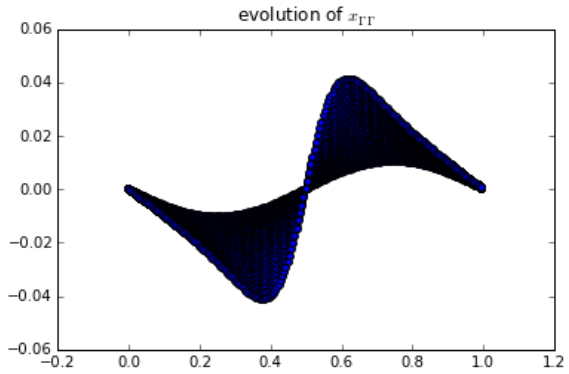
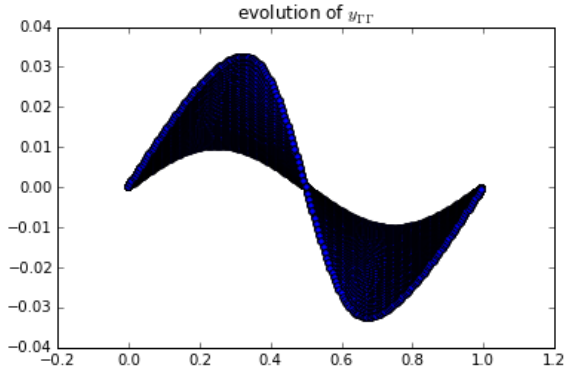
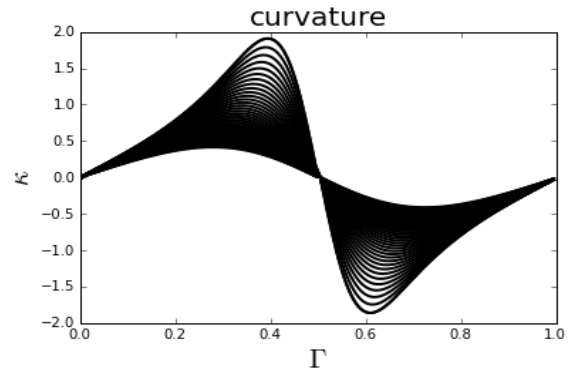


Figure 3: N=400 , $\delta = 0.1$, T=0







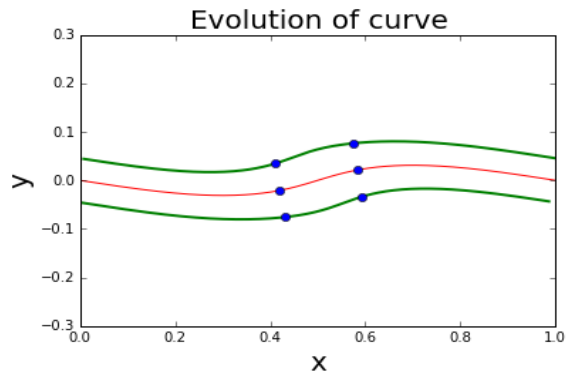


Figure 4: N=400 , $\delta = 0.1$, T=0.4

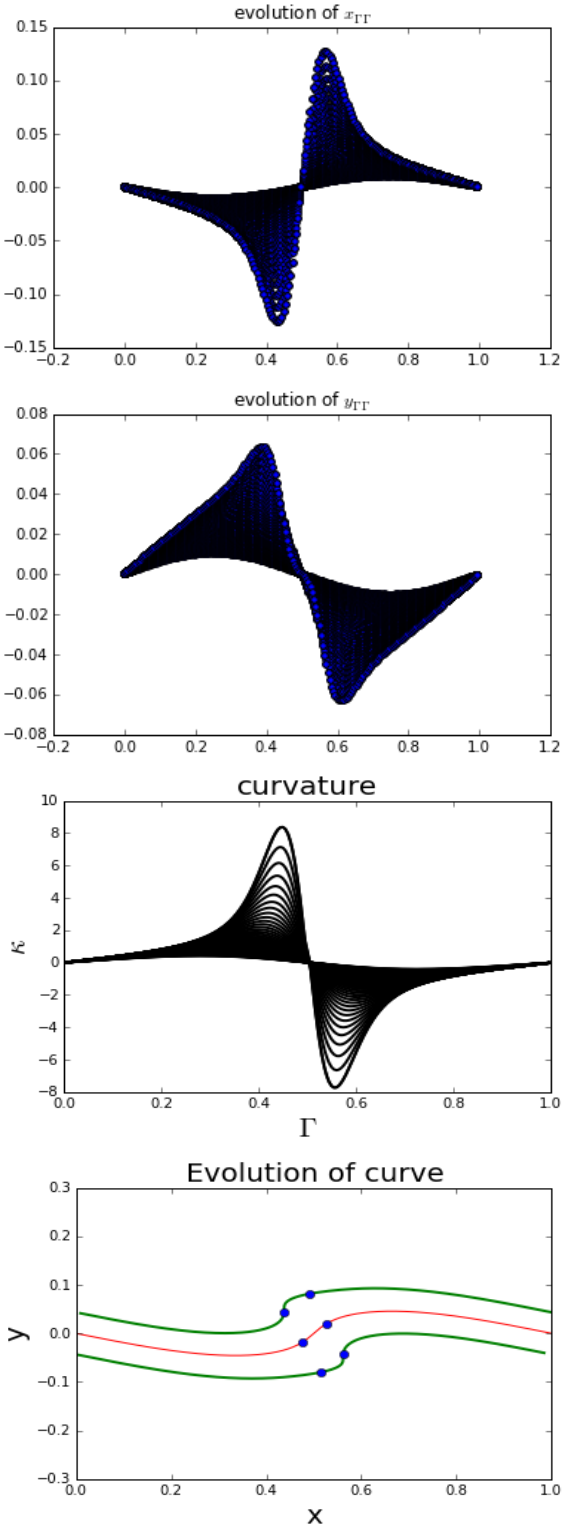


Figure 5: N=400 , $\delta = 0.1$, T=0.54

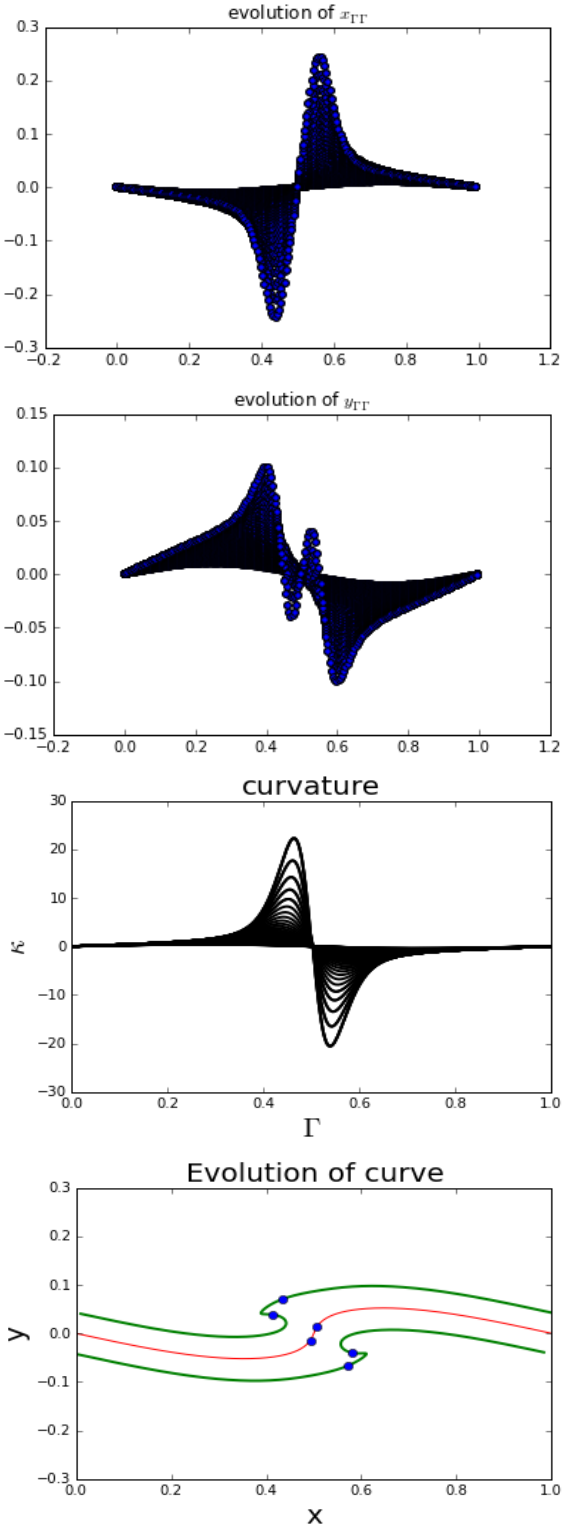


Figure 6: N=400 , $\delta = 0.1$, T=0.6

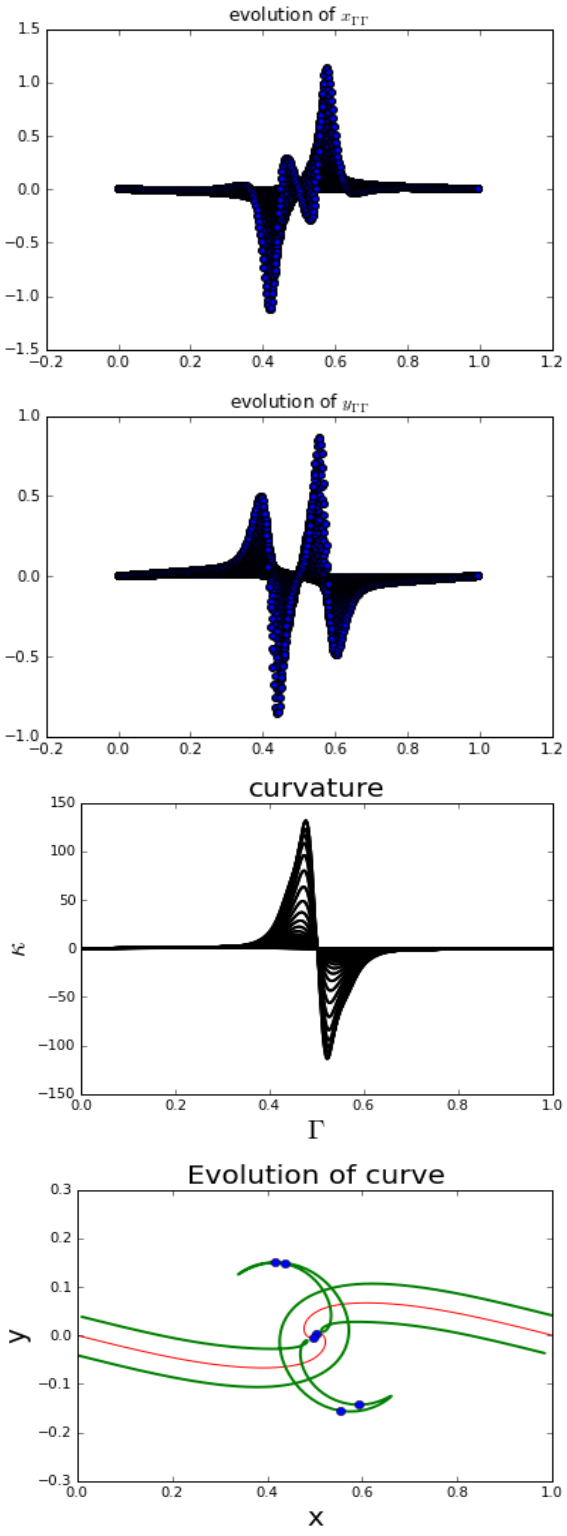


Figure 7: N=400 , $\delta = 0.1$, T=0.7