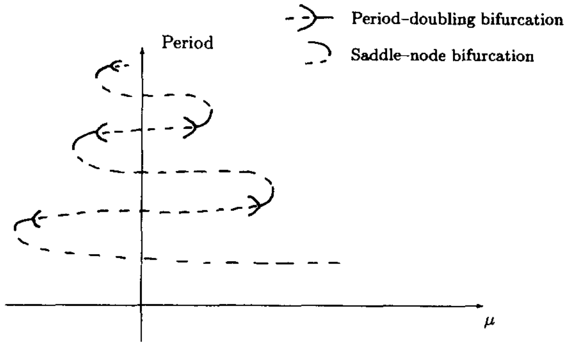

[redacted]

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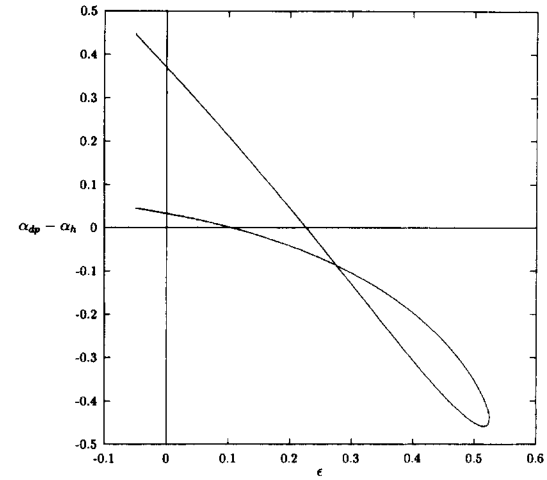
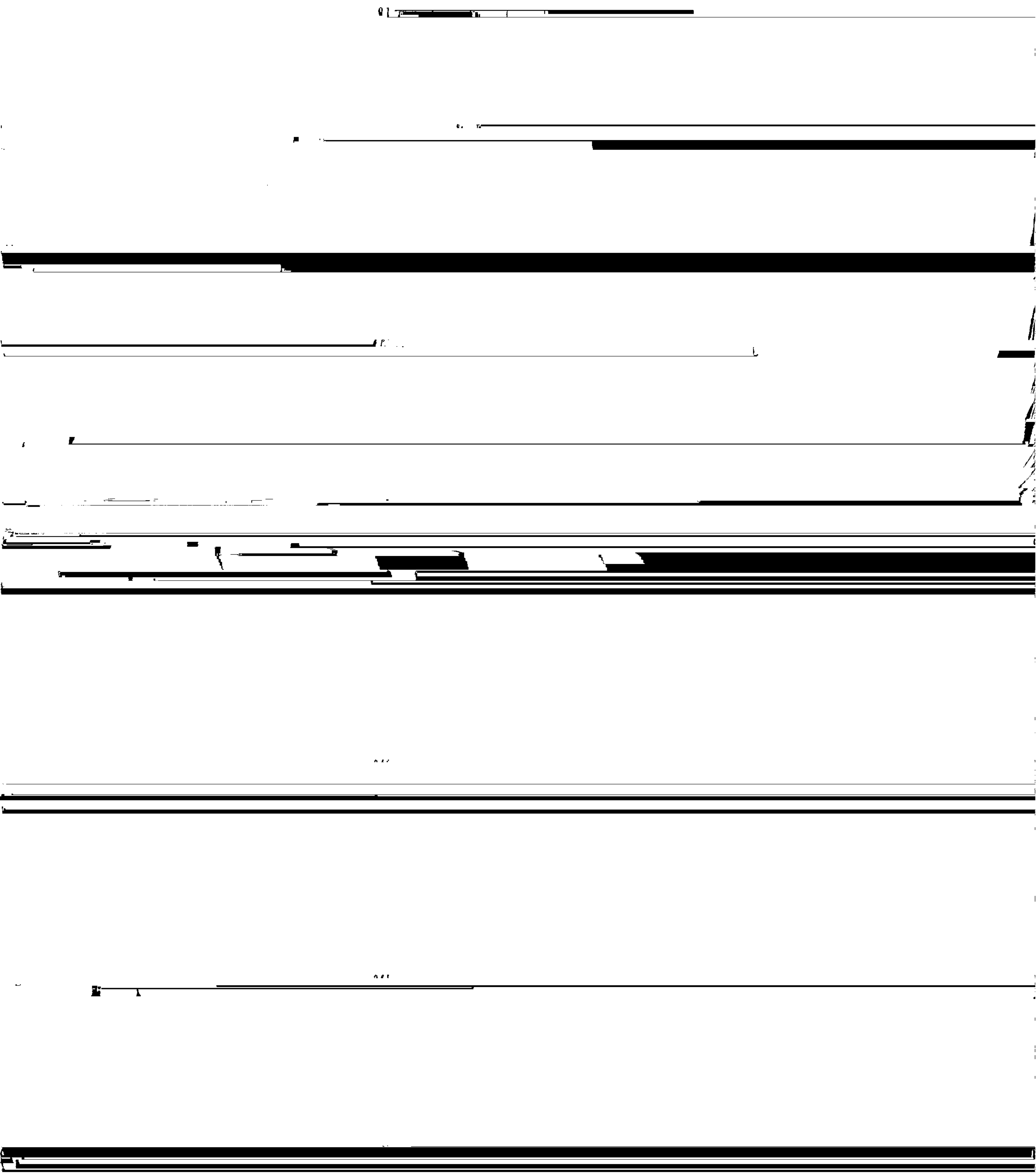
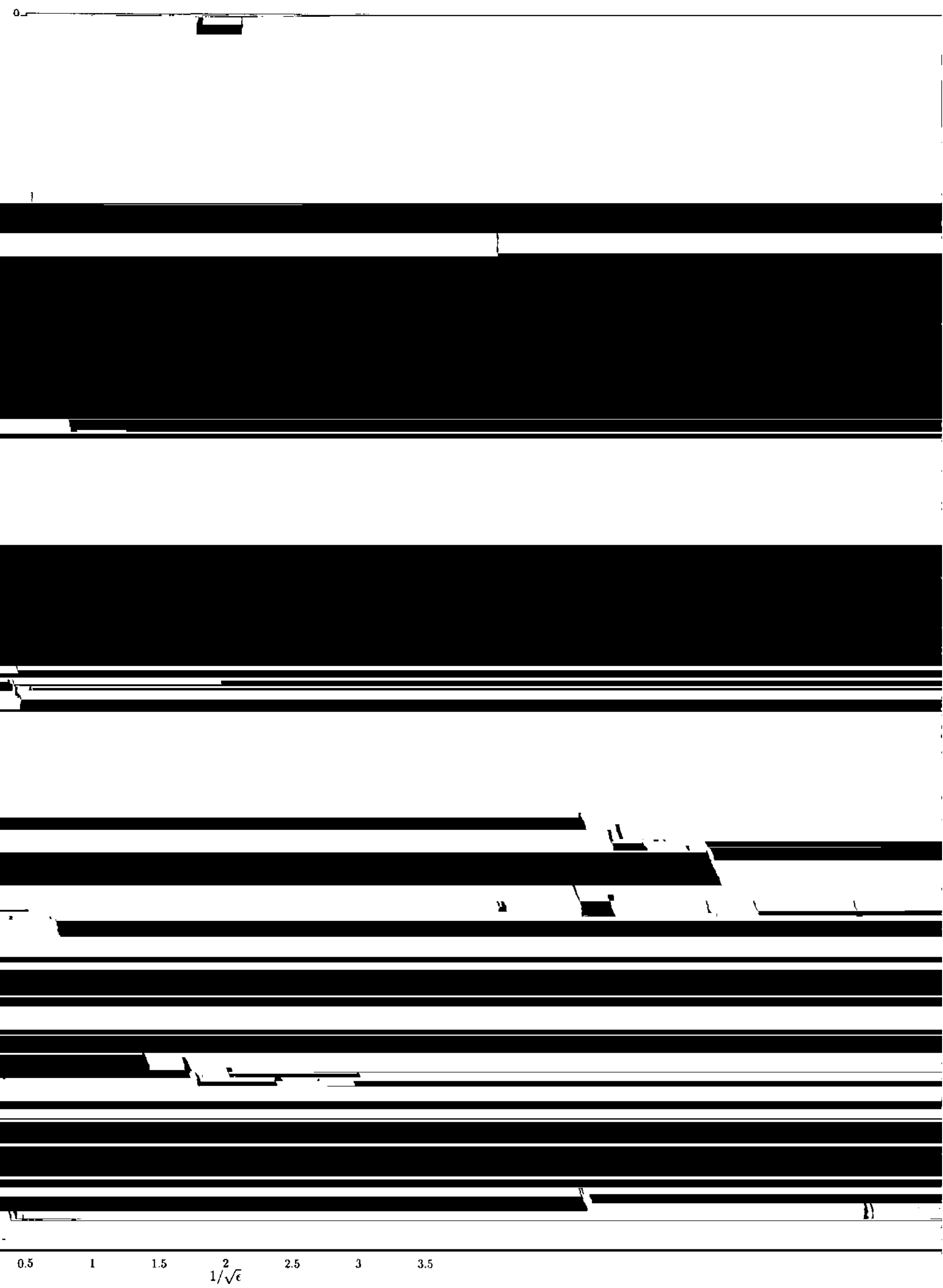


Fig. 3. The relative positions of two curves of double-pulse homoclinic bifurcations and the curve of primary homoclinic bifurcations for Eq. (16). The horizontal axis is ϵ and the vertical one is the difference between the α-values for the two curves (α_{dp}) and α_h. Two crossings are clearly seen as ϵ increases. Note that in this case the two curves of double-pulse homoclinics join together as ϵ increases.




0
0.5
1
1.5
2
2.5
3
3.5
$1/\sqrt{\epsilon}$

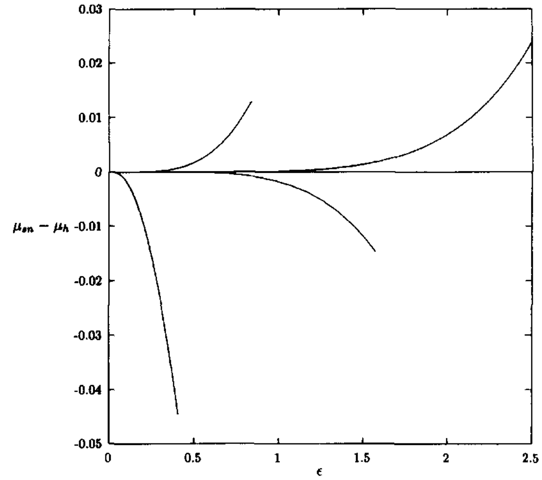


Fig. 7. A plot of the difference in μ-values for four curves of saddle-node bifurcations of periodic orbits and the curve of homoclinic bifurcations as a function of ϵ for system (18).

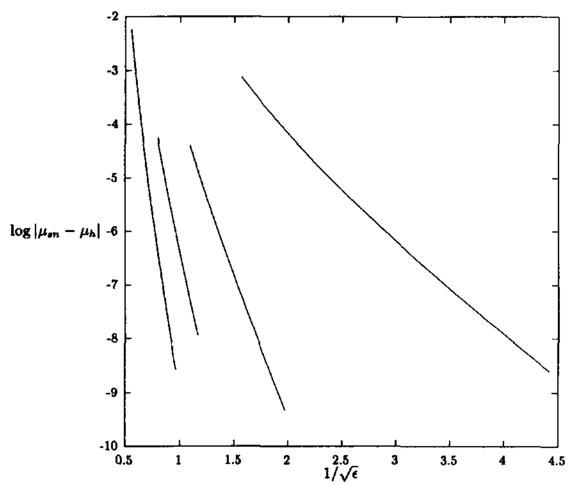


Fig. 8. A plot of $\log|\mu_{sn} - \mu_h|$ against $\epsilon^{-1/2}$ for the data shown in Fig. 7.

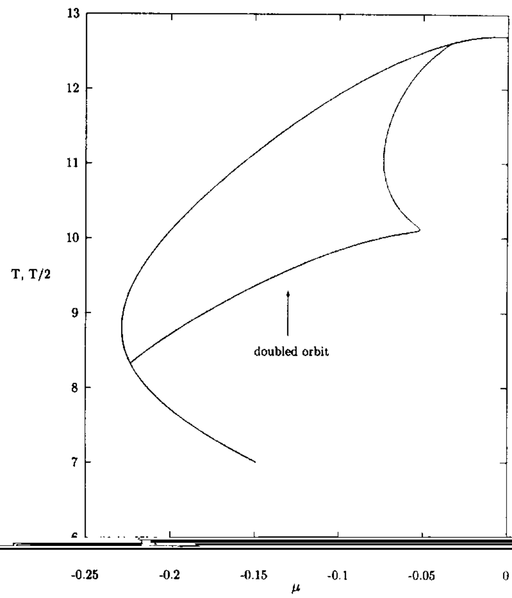


Fig. 9. A plot of period T (of the basic orbit) and half-period $\frac{1}{2}T$ (of the period-doubled orbit) versus α for Eq. (16), showing the bifurcation sequence "period-doubling, saddle-node, reverse period-doubling". The value of ϵ is 0.22346, and γ is 0.5.

5. Conclusion and comments

We did not dicuss path 1 of Fig. 2 in this paper. The bifurcations that occur along here are expected to be of interest because when $\delta = 1$, the sum of the eigenvalues of the Jacobian is zero and the flow is then locally "conservative" in some sense. There are expected to be some similarities with the $|\lambda/\nu| = 0.5$ case for the saddle-focus, as the flow in this case is also "divergence-free" at the stationary point. This last case is mentioned in [6], but does not seem to

One other avenue open for investigation is the application of the technique discussed in Section 3 to systems