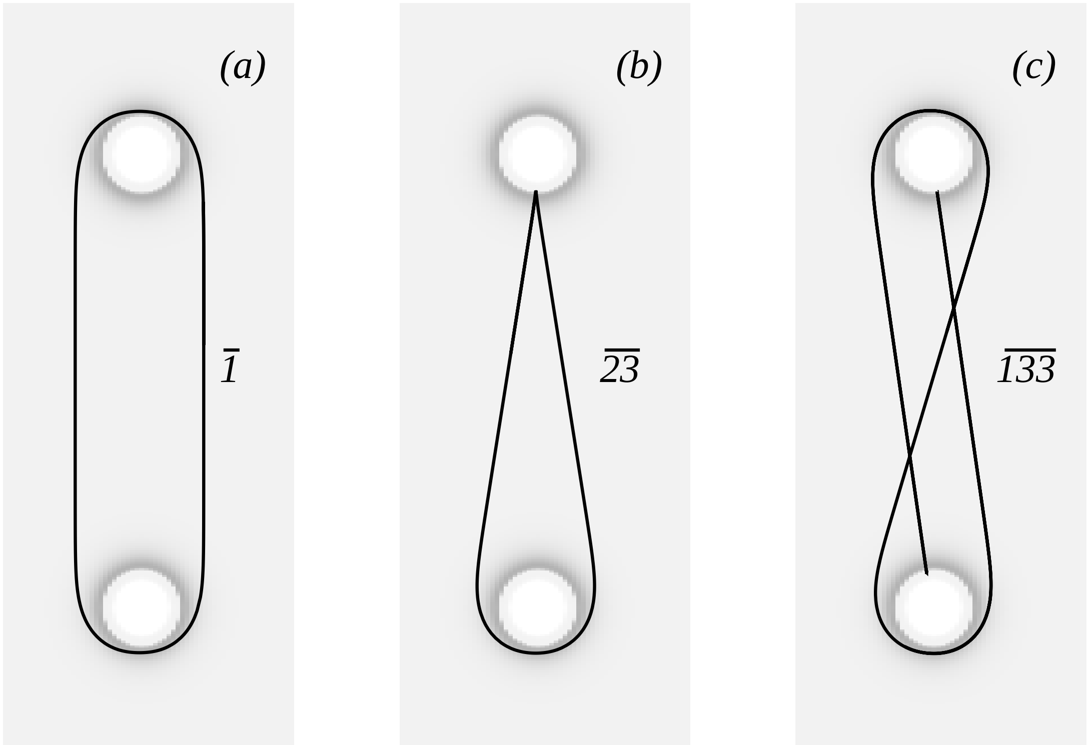

Figure 7: Some periodic orbits in the Lennard-Jones system in the full configuration space. (a) $\overline{1}$, (b) $\overline{23}$ and (c) $\overline{133}$.

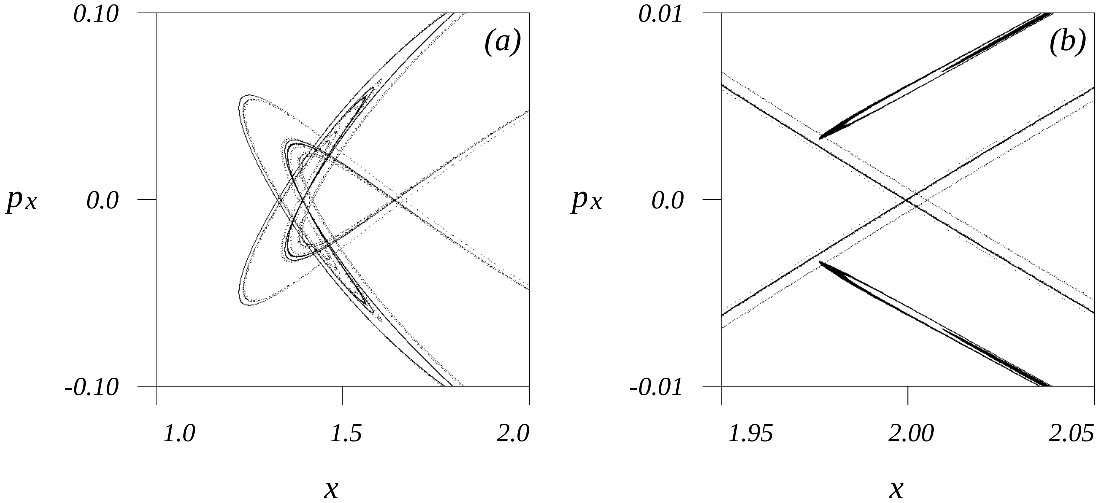

Figure 8: The manifolds at the bifurcation points of the $2 \times 2-$Cantor set repellor for $R = 2.5$. (a) $E = 0.02625$ (b) $E = 0.01369$.

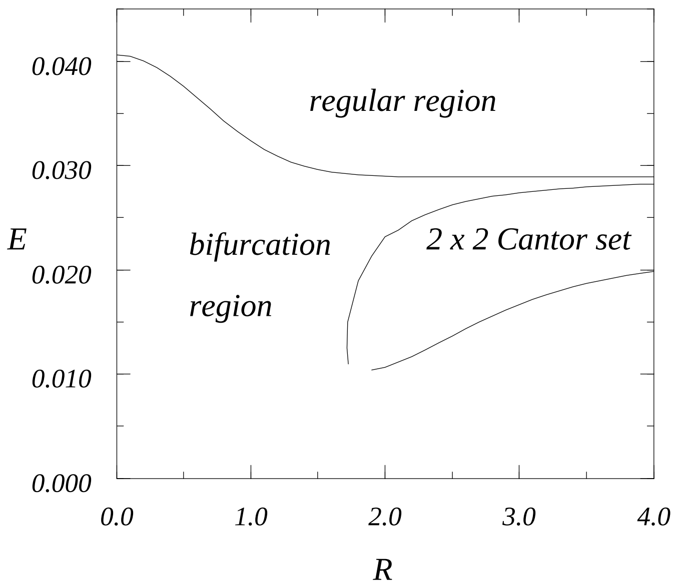

Figure 9: The bifurcation curves in the plane (R, E) giving the first bounded orbit and the border curves for the simple 2×2 Cantor set repellor, $V_0 = 0.1$ and $a = 1$.

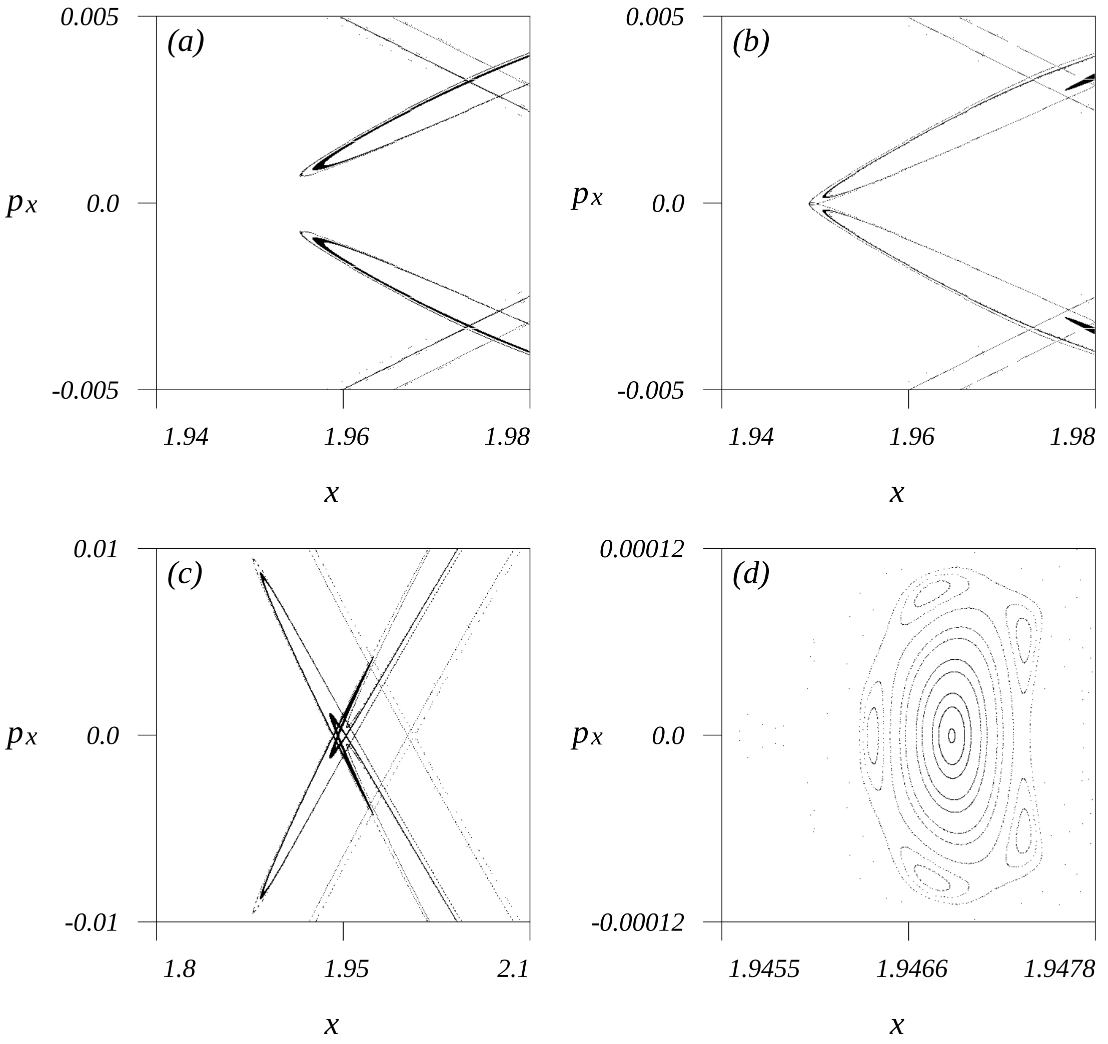

Figure 10: The manifolds as one changes the parameters in the area between the 2×2 area and the mixed-4×2 area, $R = 2.5$. (a) $E = 0.013675$ (b) $E = 0.013670$ (c) $E = 0.013600$ (d) Poincaré map showing a stable island $E = 0.013620$.

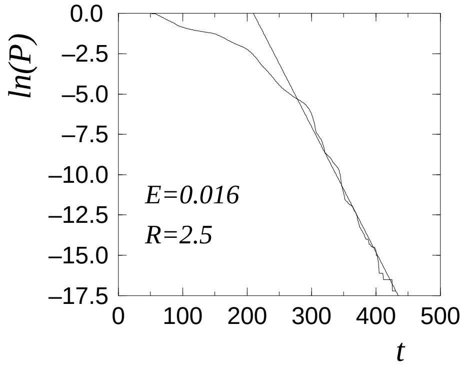

Figure 11: Exponential decay of the trajectories in the 3-Gaussian system, $E = 0.017$, $R = 2.5$. The slope of the straight line is taken from table 3.

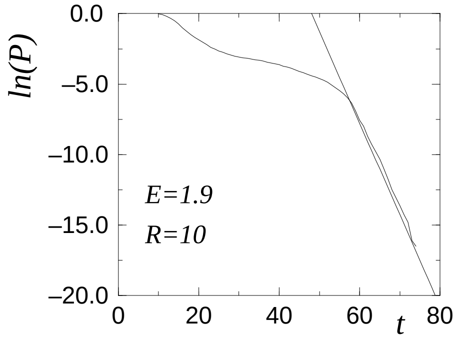

Figure 12: Exponential decay of the trajectories in the 2-Lennard-Jones system, $E = 1.9, R = 10.0$. The slope of the straight line is taken from table 5.