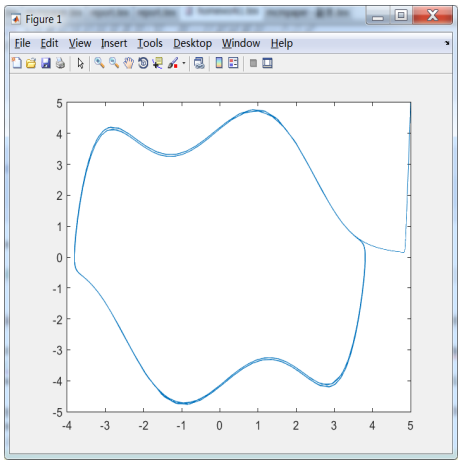
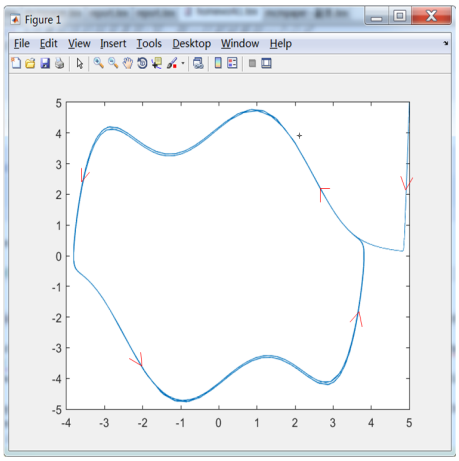
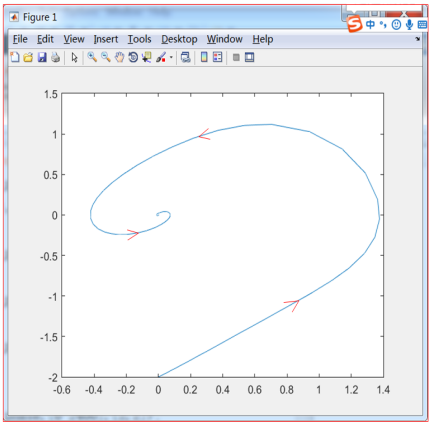
In order to mark the arrowheads and discuss the qualitative behaviour of each system, I use Matlab function $ode45$ to portrait how the two state variables x_1 and x_2 change from different initial conditions. For example, the following picture shows how these two variables change when the initial condition is (5,5).



You can see that the they would finally converge to a trajectory, so it is not a tough job to mark the arrowheads on the above figure.



I could change the initial conditions and run the same codes again in order to portrait the whole graph.



The above picture is taken when the initial condition is (0,-2). And for this case, they would finally converge to the equilibrium point because it is a stable focus.