The center-focus problem.
The stability of parameterized system of ODEs is a fundamental problem encountered in various branches of science and engineering. The center-focus problem is one of the simplest and well-known stability questions. For this problem, one would like to determine conditions on the parameters to distinguish between a center and a local focus. This talk will describe an approach based on numerical algebraic geometry which we have used to solve a three-dimensional center-focus problem. (Received January 20, 2015)