JOHANNA GARCIA SALDAÑA, Catholic University of the Most Holy Conception, Chile
An approach to the period function through the harmonic balance

Each differential system with a period annulus P has associated a period function T. The geometry of T is determined by the number and properties of its critical periods, i.e. its critical points. The critical periods in T is a counterpart to the problem of limit cycles in polynomial systems, since they play a fundamental roll in the geometry of the phase portrait of the differential system. In fact, several analytic techniques have been developed for studying these problems. In this talk we will show that the shape of T can be recovered by using a quantitative approach: the harmonic balance.