

Semiglobal Symplectic Structures Near Fibers with Multiple Focus-Focus Singular Points

Xiudi Tang
UC San Diego

Abstract

We classify, up to symplectomorphisms, a neighborhood of a singular fiber of an integrable system (which is proper and has connected fibers) containing $k > 1$ non-degenerate focus-focus critical points. Our result shows that there is a one-to-one correspondence between such neighborhoods and k formal power series, up to a $(\mathbb{Z}_2 \times D_k)$ -action, where D_k is the k -th dihedral group. This proves a conjecture of San Vu Ngoc from 2002.