

MORSE THEORY, THE MASLOV SPARK AND A QUESTION OF QUILLEN

DANIEL CIBOTARU

We present the general formalism that allows one to compute deformations of various characteristic forms of interest. Among the examples, we will focus on the duality between the Maslov cycle in the unitary group and the trace of the Maurer-Cartan form. This is related to the spectral flow of a family of self-adjoint Fredholm operators. Another example is the explicit computation of the deformation of the Chern characters associated to Quillen's superconnections obtained by rescaling the self-adjoint family of operators and letting the parameter t go to infinity. This covers both the even and the odd case. Time permitting we will also discuss some new developments involving odd Chern-Weil theory.