Chern obstruction and Morse critical points

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Let $(X, 0)$ be the germ of an equidimensional analytic set in $(\mathbb{C}^n, 0)$ and $F = (f, g_1, \ldots, g_p)$ a map-germ into $\mathbb{C}^{p+1}$ defined on X.In this work, we investigate topological invariants associated to the pair (F, X), among them, the Chern obstruction of families of differential forms associated to F. The topological information provided by these invariants is useful, although difficult to calculate. We introduce the relative Bruce-Roberts numbers as a useful algebraic tool to capture the topological information given by the Chern obstruction. Closed formulas are given when X, $X \cap F^{-1}(0)$, $X \cap G^{-1}(0)$ are ICIS, for $G = (g_1, \ldots, g_p)$.

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