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Kai Behrend*, 1984 Mathematics Road, Vancouver, B.C. Canada. *Donaldson-Thomas Invariants via Microlocal Geometry.*

We explain how ideas from microlocal geometry lead to a proof that any Donaldson-Thomas-type invariant depends only on the scheme structure of the moduli space, not the virtual fundamental class. If the moduli space is smooth, the Donaldson-Thomas-type invariant is the signed Euler characteristic. We prove a corresponding result in the general case by introducing a suitable generalization of the Euler characteristic. (The definition of "Donaldson-Thomas-type" is that the obstruction theory is symmetric, i.e. tangent spaces are dual to obstructions.) As an application, we introduce Donaldson-Thomas-type invariants also for the case of non-compact moduli spaces. (Received September 19, 2005)