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of Up zero(V) Up; 4.5 Harmonic Oscillators on Euclidean Spaces; 4.6 A Proof of the Poincare-Hopf Index Formula; 4.7 Some Estimates for DT, i's, 2 i 4; 4.8 An Alternate Analytic Proof; 4.9 References; Chapter 5 Morse Inequalities: an Analytic Proof; 5.1 Review of Morse Inequalities; 5.2 Witten Deformation; 5.3 Hodge Theorem for (* (M), dTf; 5.4 Behaviour of rf Near the Critical Points of f; 5.5 Proof of Morse Inequalities; 5.6 Proof of Proposition 5.5
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Sommario/riassunto

This invaluable book is based on the notes of a graduate course on differential geometry which the author gave at the Nankai Institute of Mathematics. It consists of two parts: the first part contains an introduction to the geometric theory of characteristic classes due to Shiing-shen Chern and Andre Weil, as well as a proof of the Gauss-Bonnet-Chern theorem based on the Mathai-Quillen construction of Thom forms; the second part presents analytic proofs of the Poincare-Hopf index formula, as well as the Morse inequalities based on deformations introduced by Edward Witten.
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