(2) The approach of Esnault-Viehweg and Kollår towards vanishing theorems, which is related to the above-mentioned connection of weak Lefschetz and vanishing theorems.

(3) The "non-vanishing theorem" of Shokurov and the application of Kawamata et al. to $\bigoplus_{m \geqslant 0} H^q(X, K_X^m)$.

Third, the book deals only with the compact theory, the noncompact theory being mentioned only in the references.

In spite of these remarks, this book should have many readers since various mathematical fields come together in an exciting way: real analysis, complex differential geometry, complex analysis and algebraic geometry.

MICHAEL SCHNEIDER

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Singularities of differentiable maps, Vol. 1. *The classification of critical sets, caustics and wave fronts*, by V. I. Arnol'd, S. M. Gusein-Zade, and A. N. Varchenko, translated from Russian by Ian Porteous. Birkhäuser, Boston, Basel and Stuttgart, 1985, x + 382 pp., $44.95. ISBN 0-8176-3187-9.

Singularity theory is a subject of comparatively recent origin, and spans a wide range of disciplines: one may study singularities of differentiable or of holomorphic maps, or of algebraic varieties, under differentiable or topological equivalences: thus topology, complex analysis, and algebraic geometry all play a part.

Although the theory has important global aspects, it is dominated by local considerations, and we will focus on these. The central object of study is the germ at a point of a C^∞-map between smooth manifolds. One commonly takes local coordinates in source and target: then the Taylor expansion of the map defines a k-jet (truncating the expansion at terms of degree k), and the germ is said to be k-determined (for the equivalence relation E) if all germs with the same k-jet are E-equivalent to it. The most important equivalence relations are defined by local diffeomorphisms of source or target or both; one may also wish to consider homeomorphisms. This idea, of approximating the infinite-dimensional space of germs by the finite-dimensional spaces of jets, is central to the whole subject.

A map is *stable* if all nearby (in the C^∞-topology) maps are equivalent to it. The equivalence may be by diffeomorphism of source and target, by homeomorphism, or many other choices. There are corresponding local notions; their precise definitions are rather technical.

Singularity theory has its origins in papers of Whitney and Thom: the latter full of ideas and proposals but not easy to follow at the time (1955–1965) when they were written. Towards 1970 several major developments gave this area of mathematics a new impetus and cohesion.