

**Guillemin, V.; Sternberg, S.**

**Geometric quantization and multiplicities of group representations.** (English) Zbl 0503.58018  
*Invent. Math.* 67, 515-538 (1982).

For a scan of this review see the [web version](#).

**MSC:**

- 53D50 Geometric quantization
- 37J15 Symmetries, invariants, invariant manifolds, momentum maps, reduction (MSC2010)
- 53D20 Momentum maps; symplectic reduction
- 22E99 Lie groups
- 81S10 Geometry and quantization, symplectic methods

Cited in **28** Reviews  
Cited in **205** Documents

**Keywords:**

Heisenberg uncertainty principle; Hamiltonian G-action; fixed points of Hamiltonian action; coadjoint representation; Kirillov conjecture

**Full Text:** [DOI](#) [EuDML](#)

**References:**

- [1] Atiyah, M.F.: Convexity and commuting Hamiltonians. *Bull. Lon. Math. Soc.* 14 (1982) 1-15 · [Zbl 0482.58013](#) · [doi:10.1112/blms/14.1.1](#)
- [2] Boutet de Monvel, L., Sjöstrand, J.: Sur la singularité des noyaux de Bergmann et de Szegö. *Asterisque* 34-35, 123-164 (1976) · [Zbl 0344.32010](#)
- [3] Boutet de Monvel, L., Guillemin, V.: The spectral theory of toeplitz operators. *Annals of Math. Studies* Vol. 99. Princeton, NJ: Princeton University Press 1981 · [Zbl 0469.47021](#)
- [4] Guillemin, V., Sternberg, S.: Some problems in integral geometry and some related problems in micro-local analysis. *Am. J. Math.* 101, 915-955 (1979) · [Zbl 0446.58019](#) · [doi:10.2307/2373923](#)
- [5] Guillemin, V., Sternberg, S.: Convexity properties of the moment mapping. *Invent. Math.* in press (1982) · [Zbl 0503.58017](#)
- [6] Heckman, G.: Projections of orbits and asymptotic behavior of multiplicities for compact Lie groups. Thesis, Leiden (1980) · [Zbl 0497.22006](#)
- [7] Hörmander, L.: Fourier integral operators I. *Acta Math.* 127, 79-183 (1972) · [Zbl 0212.46601](#) · [doi:10.1007/BF02392052](#)
- [8] Kempf, G., Ness, L.: The length of vectors in representation space. *Lect. notes in Math.* 732 (1979). Springer-Verlag · [Zbl 0407.22012](#)
- [9] Kobayashi, S.: Geometry of bounded domains. *Trans. Amer. Math. Soc.* 92, 267-290 (1959) · [Zbl 0136.07102](#) · [doi:10.1090/S0002-9947-1959-0112162-5](#)
- [10] Kostant, B.: Orbits, symplectic structures, and representation theory. *Proc. US-Japan Seminar in Differential Geometry, Kyoto, (1965)*, Nippon Hyoronsha, Tokyo, 1966 · [Zbl 0134.03504](#)
- [11] Kostant, B.: Quantization and unitary representations. In: *Modern analysis and applications. Lecture Notes in Math.*, Vol. 170, pp. 87-207. Berlin-Heidelberg-New York: Springer 1970 · [Zbl 0223.53028](#)
- [12] Marsden, J., Weinstein, A.: Reduction of symplectic manifolds with symmetry. *Reports on Math. Phys.* 5, 121-130 (1974) · [Zbl 0327.58005](#) · [doi:10.1016/0034-4877\(74\)90021-4](#)
- [13] Melin, A., Sjöstrand, J.: Fourier integral operators with complex phase functions. In: *Fourier integral operators and partial differential equations. Lecture Notes*, vol. 459, pp. 120-223. Berlin-Heidelberg-New York: Springer 1975 · [Zbl 0306.42007](#)
- [14] Mumford, D.: Geometric invariant theory. *Ergebnisse der Math.*, Vol. 34. Berlin-Heidelberg-New York: Springer 1965 · [Zbl 0147.39304](#)
- [15] Simms, D., Woodhouse, N.: Lectures on geometric quantization. *Lectures Notes in Physics*, Vol. 53. Berlin-Heidelberg-New York: Springer 1976 · [Zbl 0343.53023](#)
- [16] Weinstein, A.: Lectures on symplectic manifolds, AMS, Regional Conference in Mathematics Series, Vol. 29, AMS, Providence, R.I. 1976 · [Zbl 0406.53031](#)
- [17] Weinstein, A.: Symplectic geometry. *Bull. Am. Math. Soc.* 5, 1-13 (1981) · [Zbl 0465.58013](#) · [doi:10.1090/S0273-0979-1981-14911-9](#)

- [18] Atiyah, M., Singer, I.M.: The index of elliptic operators, III. *Ann. of Math.* 87, 546-604 (1968) · [Zbl 0164.24301](#) · [doi:10.2307/1970717](#)
- [19] Kawasaki, T.: The Riemann-Roch theorem for complex V-manifolds. *Osaka Journal of Math.* 16, 151-159 (1979) · [Zbl 0405.32010](#)
- [20] Satake, I.: On a generalization of the notion of manifold. *Proc. Nat. Acad. Sci. USA* 42, 359-363 (1956) · [Zbl 0074.18103](#) · [doi:10.1073/pnas.42.6.359](#)
- [21] Weinstein, A.: Symplectic V-manifolds, periodic orbits of Hamiltonian systems and the volume of certain Riemann manifolds. *Comm. Pure and App. Math.* 30, 265-271 (1977) · [Zbl 0339.58007](#) · [doi:10.1002/cpa.3160300207](#)

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.