

Dimock, J.

Algebras of local observables on a manifold. (English) Zbl 0455.58030
Commun. Math. Phys. 77, 219-228 (1980).

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

MSC:

58J90 Applications of PDEs on manifolds
81T05 Axiomatic quantum field theory; operator algebras
81Q05 Closed and approximate solutions to the Schrödinger, Dirac, Klein-Gordon and other equations of quantum mechanics

Cited in **2** Reviews
Cited in **74** Documents

Keywords:

[Haag-Kastler axioms for algebras of local observables](#); [Lorentzian manifolds](#); [Klein-Gordon equation](#); [representation of the canonical commutation relations over some Cauchy surface](#); [field operator](#); [C-star-algebras](#)

Full Text: [DOI](#)

References:

- [1] Fourés-Bruhat, Y.: Propagateurs et solutions d'équations homogènes hyperboliques. *C. R. Acad. Sci.*251, 29 (1960)
- [2] Choquet-Bruhat, Y.: Hyperbolic differential equations on a manifold. In: *Batelle rencontres* (eds. C. De Witt, J. Wheeler). New York: Benjamin 1977 · [Zbl 0364.58010](#)
- [3] De Witt, B.: Quantum field theory in curved space-time. *Phys. Rep.* 19C 295 (1974)
- [4] Dimock, J.: Scalar quantum field in an external gravitational field. *J. Math. Phys. (N. Y.)*20, 2549 (1979) · [Zbl 0455.35105](#) · [doi:10.1063/1.524062](#)
- [5] Dyson, F.: Missed opportunities. *Bull. Am. Math. Soc.*78, 635 (1972) · [Zbl 0271.01005](#) · [doi:10.1090/S0002-9904-1972-12971-9](#)
- [6] Geroch, R.: The domain of dependence. *J. Math. Phys. (N. Y.)*11, 437 (1970) · [Zbl 0189.27602](#) · [doi:10.1063/1.1665157](#)
- [7] Guillemin, V., Sternberg, S.: *Geometric asymptotics*, Providence, R.I.: Amer. Math. Soc. 1977 · [Zbl 0364.53011](#)
- [8] Haag, R., Kastler, D.: An algebraic approach to quantum field theory. *J. Math. Phys.*5, 848 (1964) · [Zbl 0139.46003](#) · [doi:10.1063/1.1704187](#)
- [9] Haag, R., Schroer, S.: Postulates of quantum field theory, *J. Math. Phys.*3, 248 (1962) · [Zbl 0125.21903](#) · [doi:10.1063/1.1703797](#)
- [10] Hajicek, P.: Observables for quantum fields on curved backgrounds. In: *Differential geometrical methods in mathematical physics II* (eds. K. Bleuler, H. Petry, A. Reetz), p. 535. Berlin, Heidelberg, New York: Springer 1978 · [Zbl 0391.53033](#)
- [11] Hawking, S., Ellis, G.: *The large scale structure of space-time*. Cambridge: Cambridge University Press, 1973 · [Zbl 0265.53054](#)
- [12] Isham, C.: Quantum field theory in curved space-time: a general mathematical framework. In: *Differential geometrical methods in mathematical physics II* (eds. K. Bleuler, H. Petry, A. Reetz), p. 459. Berlin, Heidelberg, New York: Springer 1978 · [Zbl 0403.58007](#)
- [13] Kay, B.: Linear spin-zero quantum fields in external gravitational and scalar fields: I: *Commun. Math. Phys.*62, 55 (1978); II: *Commun. Math. Phys.*71, 29, (1980) · [doi:10.1007/BF01940330](#)
- [14] Leray, J.: *Hyperbolic differential equations*. Lecture notes, Princeton 1953 (unpublished)
- [15] Lichnerowicz, A.: *Propagateurs et commutateurs en relativité général*. Publication IHES, no. 10, (1961)
- [16] Penrose, R.: *Techniques of differential topology in relativity*. SIAM, Philadelphia (1972) · [Zbl 0321.53001](#)
- [17] Simon, B.: *Topics in functional analysis*. In: *Mathematics of contemporary physics* (ed. R. Streater). New York: Academic Press 1972
- [18] Wald, R.: Existence of the S-matrix in quantum field theory in curved space-time. *Ann. Phys. (N. Y.)*118, 490 (1979) · [doi:10.1016/0003-4916\(79\)90135-0](#)

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.