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Quantum field theories in all dimensions. (English) [Zbl 0851.46051](#)

Commun. Math. Phys. 177, No. 3, 631-671 (1996).

We exhibit a large class of hermitian scalar field theories satisfying the Wightman axioms. For each $d > 0$, and each polynomial P , we exhibit a collection of theories which are loosely but legitimately based on a $P(\varphi)$ interaction in d space dimensions. One of the features of the construction is that the Wightman n -point function of each theory is a sum of finitely many integrals associated with “Feynman-like” graphs. Thus, it is in closed form.

Reviewer: C.J.Read (Cambridge)

MSC:

46N50 Applications of functional analysis in quantum physics

81T08 Constructive quantum field theory

81T10 Model quantum field theories

Cited in **1** Review

Cited in **4** Documents

Keywords:

quantum field theory; scalar field; Feynman-like graphs; hermitian scalar field theories; Wightman axioms; $P(\varphi)$ interaction

Full Text: [DOI](#)

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GJ1 Glimm, J., Jaffe, A.: A $\{\lambda\}\{\phi\}^2$ quantum field theory without cutoffs I. *Phys. Rev.*176, 1945–1951 (1968) · [Zbl 0177.28203](#) · [doi:10.1103/PhysRev.176.1945](#)

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