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Classification of traces and associated determinants on odd-class operators in odd dimensions. (English) [Zbl 1246.58023](#)

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Summary: To supplement the already known classification of traces on classical pseudodifferential operators, we present a classification of traces on the algebras of odd-class pseudodifferential operators of non-positive order acting on smooth functions on a closed odd-dimensional manifold. By means of the one to one correspondence between continuous traces on Lie algebras and determinants on the associated regular Lie groups, we give a classification of determinants on the group associated to the algebra of odd-class pseudodifferential operators with fixed non-positive order. At the end we discuss two possible ways to extend the definition of a determinant outside a neighborhood of the identity on the Lie group associated to the algebra of odd-class pseudodifferential operators of order zero.

MSC:

[58J40](#) Pseudodifferential and Fourier integral operators on manifolds

[47C05](#) Linear operators in algebras

Keywords:

pseudodifferential operators; odd-class; trace; determinant; logarithm; regular Lie group

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