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GEOMETRIC SYMBOL CALCULUS FOR PSEUDODIFFERENTIAL OPERATORS. I

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A connection on a manifold allows us to define the full symbol of a pseudodifferential operator in an invariant way. The latter is called the geometric symbol to distinguish it from the coordinate-wise symbol. The traditional calculus is developed for geometric symbols: an expression of the geometric symbol through the coordinate-wise symbol, formulas for the geometric symbol of the product of two operators, and of the dual operator.

The work consists of two parts. The first part considers operators on scalar functions. The second part generalizes main results to operators on vector bundles.

Key words and phrases: pseudodifferential operator, connection on a manifold, covariant derivative.

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