ON THE NON-LINEAR COHOMOLOGY OF LIE EQUATIONS. I

BY

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Due to the length of this paper, it is being published in two parts.
Part II will appear at the beginning of the next issue of this journal.

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Introduction

The infinitesimal transformations of a Lie pseudogroup, acting on a manifold X, are solutions of a linear partial differential equation R_k which is a Lie equation in the tangent bundle T of X; the space $R_{\infty,x}$ of formal solutions of R_k at a point $x \in X$ is a topological Lie algebra and, if the pseudogroup is transitive, it is a transitive Lie algebra in the sense of Guillemin-Sternberg [13].

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