HOMOMORPHISMS OF CONTINUOUS PSEUDOGROUPS

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Introduction. In this paper we attempt to set up a notion of homomorphism for continuous pseudogroups and show that the kernel exists (as a continuous pseudogroup) in the transitive case. This paper is really an extension of the paper by Kuranishi and Rodrigues [11] which essentially examines the question of the existence (as a continuous pseudogroup) of an image of a homomorphism. A certain amount of overlap in definitions and statements of results was unavoidable, especially in sections 2 and 3, but for many proofs and constructions the reader is referred to that paper. For the basic notions of the theory of continuous pseudogroups as used in section 4, see Kuranishi [9] and for the terminology of the Cartan-Kähler theory used in section 5, see Kuranishi [6]. Fuller expositions may be found in Cartan [1], Kähler [4], Kumpera [5], Kuranishi [7], and Schouten and v.d. Kulk [13].

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§ 1. Basic Notions

Since important parts of this theory hold only in the real analytic case, we assume that all manifolds, maps, etc. are real analytic. Most frequently, we assume that our manifolds are pointed manifolods, i.e., pairs consisting of a manifold and a distinguished point in that manifold. We write (M, p) to indicate that p is the distinguished point of M. Since our theory is primarily local, it will often be desirable to "shrink" M, i.e., to replace M by an open, connected neighborhood of p. We will usually not indicate such shrinkings in our notation. It is usually assumed that a mapping from one manifold to

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