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LIE ALGEBRA BUNDLES OF FINITE TYPE AND NUMERABLE BUNDLES

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Abstract: In this paper, we study the relation between numerable Lie algebra bundle and Lie algebra bundle of finite type. The effect of finite type on shrinkable maps and homotopy equivalence are examined. Further, we obtain some results on Section Extension Property, Covering Homotopy Property and Weak Covering Homotopy Property for Lie algebra bundles of finite type.

Keywords and Phrases: Lie algebra bundles of finite type, universal bundle, shrinkable maps, homotopy, numerable covering, numerable bundle.

2020 Mathematics Subject Classification: 17BXX, 18AXX, 55PXX, 55P10, 55RXX, 57R22.

1. Introduction

Following the procedure of Huebsch [5] and Hurewicz [6], Dold got the results on Covering Homotopy property(CHP) as a consequence of section extension theorem [3]. The necessary and sufficient condition for Covering Homotopy Property(CHP) was examined and CHP for induced spaces has been studied in [3]. To study fibre homotopy equivalence, Dold considered Weak Covering Homotopy Property(WCHP). The results were customised for spaces with numerable covering. The notions of numerable covering and numerable bundles introduced by Dold in [3] pave the way for some results on bundles of finite type, that we examine in this paper. Here all underlying vector spaces are real and finite dimensional.