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Larissa V. Sbitneva* (larissa@uaem.mx), Av. Universidad, 1001, CInC, Chamilpa, 62210, Morelos, México, 62210 Cuernavaca, Mexico. *Differential equations of smooth loops with the S. Lie approach.*

It seems natural to obtain the infinitesimal theory of general M -loops as an analogous treatment of the Lie theory. Some results of this approach will be presented.

A brief survey on basic notions and relations between algebraic and geometric structures of smooth M loops, generalizing Bol-Bruck loops, will be presented in order to meet

the interest in recent publications to these loops due to applications in Special Relativity (arXiv: gr-qc/0407098V126 Julio 2004, Special Relativity as a non commutative geometry: Lessons for Deformed Special Relativity Florian Girelli, Etera R. Livine, p. 15-16), (Jaiyeola, TG, Solarin ART, Adeniran JO. 2014. Some Bol-Moufang characterizations of the Thomas Precession of a gyrogroup. Algebras, Groups and Geometries. 31(3):341-362). (Received February 15, 2016)