MOUFANG POLYLOOP AND ITS ALGEBRAIC PROPERTIES

OYEYEMI OLUWASEYI OYEBOLA

Department of Mathematics and Computer Science, Brandon University, Brandon Manitoba, Canada E-mail: oyebolao@brandonu.ca

(Joint work with T. G. Jaíyéolá and K.G. Ilori) Department of Mathematics, Obafemi Awolowo University, Ile-Ife, Osun State, Nigeria E-mail: tjayeola@oauife.edu.ng, kennygilori@gmail.com

Abstract. This work introduced and characterized a class of polyloops called Moufang Polyloop and is devoted to studying some algebraic properties of this special class of polyloops. The Moufang identities in classical loop theory were adopted to conceptualize the Moufang polyloop. Moufang polyloop identities were characterized into Moufang polyloop-1, 2, 3 and 4. The flexibility law and some algebraic properties satisfied by each of these identities were studied.

References

- [1] P. Corsini and B. Davvaz, New connections among multivalued functions, hyperstructures and fuzzy Sets, Journal of Mathematics and Statistics, Jordan, 3(3), (2010), 133–150.
- B. Davvaz, A brief survey on algebraic hyperstructures: Theory and applications, Journal of Algebraic Hyperstructures and Logical Algebras, 1(3) (2020), 15–29.
- B. Davvaz and T. Vougiouklis, A Walk Through Weak Hyperstructures Hv-Structures, World Scientific Publishing Co. Pte. Ltd, Singapore (2019).
- [4] Jaiyeola T. G., Ilori K.G., Oyebola O. O. (2023). On some non-associative hyper-algebraic structures, International Online Conference Algebraic and geometric methods of analysis Odesa¬ Kyiv, Ukraine.
- [5] Jaiyeola T. G., Adeniregun A.A., Oyebola O. O. and Adelakun A.(2021). FRUTE Loops, Algebras Groups and Geometries 37(2):159-179 DOI:10.29083/AGG.37.02.2021

2020 Mathematics Subject Classification: 20N20, 20N05, 17A30

Key words and phrases: Polyquasigroup, Polyloops, Moufang Polyloop, flexibility.

- [6] Jaiyeola, T. G., David S. P., Oyebola O. O. (2021). New algebraic properties of middle Bol loops II, Vol. 40 No.1
- [7] Oyebola O. O., Jaiyeola T. G., and Ilori K.G. (2024). Extra Polyloop-II and its representations. International Conference on Representations of Algebras (ICRA 21) in Shanghai Jiao Tong University (Xu Jiahui Campus), Shanghai, China, July 31- August 9, 2024.
- [8] Oyebola O. O., Jaiyeola T. G., and Ilori K.G. (2023). Characterization of extra Polyloop-I, LOOPS' 23, Mathematical Research and Conference Center of the Polish Academy of Sciences in Bedlewo, Poland.
- [9] Oyebola, O.O. and Jaiyeola, T.G. (2019). Non-associative Hyperstructures and their Applications to Biological Inheritance. Monografías Matemáticas García de Galdeano 42, 229–241.
- [10] Ilori K.G., Jaiyeola T. G. and Oyebola O. O., Analysis of Weak Hyper-Algebraic Structures that represent Dismutation Reaction, MATCH Communications in Mathematical and in Computer Chemistry, accepted.