

Distributive and anti-distributive Mendelsohn triple systems

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Abstract. We prove that the existence spectrum of Mendelsohn triple systems whose associated quasigroups satisfy distributivity corresponds to the Loeschian numbers, and provide some enumeration results. We do this by considering a description of the quasigroups in terms of commutative Moufang loops.

In addition we provide constructions of Mendelsohn quasigroups that fail distributivity for as many combinations of elements as possible.

These systems are analogues of Hall triple systems and anti-mitre Steiner triple systems respectively.