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F-quasigroups isotopic to groups

Abstract: In Kepka T., Kinyon M.K., Phillips J.D., *The structure of F-quasigroups*, `math.GR/0510298`, we showed that every loop isotopic to an F-quasigroup is a Moufang loop. Here we characterize, via two simple identities, the class of F-quasigroups which are isotopic to groups. We call these quasigroups FG-quasigroups. We show that FG-quasigroups are linear over groups. We then use this fact to describe their structure. This gives us, for instance, a complete description of the simple FG-quasigroups. Finally, we show an equivalence of equational classes between pointed FG-quasigroups and central generalized modules over a particular ring.

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