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Quasigroups arisen by right nuclear extension

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Abstract: The aim of this paper is to prove that a quasigroup Q with right unit is isomorphic to an f-extension of a right nuclear normal subgroup G by the factor quasigroup Q/G if and only if there exists a normalized left transversal $\Sigma \subset Q$ to G in Q such that the right translations by elements of Σ commute with all right translations by elements of the subgroup G. Moreover, a loop Q is isomorphic to an f-extension of a right nuclear normal subgroup G by a loop if and only if G is middle-nuclear, and there exists a normalized left transversal to G in Q contained in the commutant of G.

Keywords: extension of quasigroups, right nucleus, quasigroup with right unit, transversal
AMS Subject Classification: 20N05

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