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SYMMETRICAL 2-EXTENSIONS OF THE 2-DIMENSIONAL GRID. II

E. A. Konoval'chik, K. V. Kostousov

The investigation of symmetrical q-extensions of a d-dimensional cubic grid Λ^d is of interest both for group theory and for graph theory. For small $d \geq 1$ and $q > 1$ (especially for $q = 2$), symmetrical q-extensions of Λ^d are of interest for molecular crystallography and some phisycal theories. Earlier V. Trofimov proved that there are only finitely many symmetrical 2-extensions of Λ^d for any positive integer d. This paper is the second and concluding part of our work devoted to the description of all, up to equivalence, realizations of symmetrical 2-extensions of Λ^2 (we show that there are 162 such realizations). In the first part of our work, which was published earlier, we found all, up to equivalence, realizations of symmetrical 2-extensions of Λ^2 such that only the trivial automorphism fixes all blocks of the imprimitivity system (87 realizations). In the present paper, we find the remaining realizations of symmetrical 2-extensions of Λ^2.

Keywords: symmetrical extension of a graph, d-dimensional grid.

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Elena Aleksandrovna Konoval'chik, Cand. Sci. (Phys.-Math.), Krasovskii Institute of Mathematics and Mechanics, Ural Branch of the Russian Academy of Sciences, Yekaterinburg, 620990 Russia; Nosov Magnitogorsk State Technical University, Magnitogorsk, 455000 Russia,

e-mail: asmi@imm.uran.ru .

Kirill Viktorovich Kostousov, Cand. Sci. (Phys.-Math.), Krasovskii Institute of Mathematics and Mechanics, Ural Branch of the Russian Academy of Sciences, Yekaterinburg, 620990 Russia,
e-mail: asmi@imm.uran.ru .

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