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Abstracts of Short Communications and Posters

Section:

6. Topology

1991 MS Classification: 17, 52, 57
Makarov, Vitalii S., Univ. Drujb. Narod., Russia
Regular maps and hyperbolic 3-manifolds
A hyperbolic 3-manifold $\mathcal{M}^3$ with symmetry group of order 28 800 is constructed. The map of this manifold is composed from 120 hyperbolic dodecahedra with dihedral angle $2\pi/5$. It is shown that $\mathcal{M}^3$ is embedded (with self-intersections) into the hyperbolic four-dimensional manifold of regular 120-cells D^4 (Davis manifold $\mathcal{D}^4$). It is proved that the map of this 3-manifold coincides with the map given by the incidence structure of 3-faces of four-dimensional regular star polytope $\{5, 3, 5/2\}$. Part of these results is joint work with F. Damian.
Reference: F. L. Damian, and V. S. Makarov, Star polytopes and hyperbolic 3-manifolds *Bul. Acad. de Ştiinţe a Rep. Moldova. Matematica* (to appear).