

S^2 coverings by isosceles and scalene triangles – adjacency case I

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Abstract

The aim of this paper is the study and classification of spherical f-tilings by scalene triangles T and isosceles triangles T' . Due to the complexity of this wide class of tilings, we consider a subclass performed by the adjacency of the shortest side of T and the longest side of T' . It consists of seven families of f-tilings (four families with one discrete parameter and one continuous parameter, two families with one discrete parameter and one sporadic f-tiling). We also analyze the combinatorial structure of all these families of f-tilings, as well as the group of symmetries of each tiling and the transitivity classes of isohedrality and isogonality.

Keywords: Dihedral f-tilings, combinatorial properties, spherical trigonometry, symmetry groups.

Math. Subj. Class.: 52C20, 52B05, 20B35

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S^2 pokritja z enakokrakimi in raznostraničnimi trikotniki – sosednostni primer I

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Povzetek

Cilj tega članka je raziskovanje in klasifikacija sferičnih f-tlakovanj z raznostraničnimi trikotniki T in enakokrakimi trikotniki T' . Zaradi kompleksnosti tega širokega razreda tlakovanj obravnavamo podrazred, določen s sosednostjo najkrajše stranice trikotnika T in najdaljše stranice trikotnika T' . Sestoji iz sedmih družin f-tlakovanj (štirih družin z enim diskretnim parametrom in enim zveznim parametrom, dveh družin z enim diskretnim parametrom ter enega sporadičnega f-tlakovanja). Analiziramo tudi kombinatorično strukturo vseh teh družin f-tlakovanj, pa tudi grupo simetrij vsakega tlakovanja in tranzitivnostne razrede izoedrske in izogonalnosti.

Ključne besede: Diedrska f-tlakovanja, kombinatorične lastnosti, sferična trigonometrija, simetrijske grupe.

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