

Also available at <http://amc-journal.eu>  
ISSN 1855-3966 (printed edn.), ISSN 1855-3974 (electronic edn.)  
Ars Mathematica Contemporanea 8 (2015) 297–318

## **Spherical tilings by congruent quadrangles: Forbidden cases and substructures**

*Yohji Akama, Nico Van Cleemput*

**Abstract:** In this article we show the non-existence of a class of spherical tilings by congruent quadrangles. We also prove several forbidden substructures for spherical tilings by congruent quadrangles. These are results that will help to complete of the classification of spherical tilings by congruent quadrangles.

Math. Subj. Class.: 05B45, 05C10, 51M20, 52C20

**Keywords:** Spherical tiling by congruent quadrangles, monohedral tiling, quadrangulation.

## **Tlakovanja sfere s skladnimi štirikotniki: “prepovedani” primeri in podstrukture**

**Povzetek:** V tem članku dokažemo neobstoj določenega razreda tlakovanj sfere s skladnimi štirikotniki. Najdemo tudi določene “prepovedane” podstrukture, ki v tlakovanjih sfere s skladnimi štirikotniki ne morejo nastopati. Ti rezultati bodo pomagali dokončati klasifikacijo tlakovanj sfere s skladnimi štirikotniki.

**Ključne besede:** Tlakovanja sfere s skladnimi štirikotniki, monoedrska tlakovanja, kvadrangulacije.