Spherical tilings by congruent quadrangles

Akama Yohji[†], Nico Van Cleemput[‡]
[†] Mathematical Institute, Graduate School of Science, Tohoku University,
Sendai 980-0845, Japan
[‡] Departement Applied Mathematics and Computer Science,
Krijgslaan 281 - S9 - WE02, 9000 Ghent, Belgium
akama@m.tohoku.ac.jp, nico.vancleemput@gmail.com

A spherical tiling is an edge-to-edge partition of the unit sphere into spherical polygons. Each spherical polygon is called a tile. If all tiles are congruent, then it follows from Euler's formula that those tiles are either 3-, 4- or 5-gons.
In 2002, Ueno and Agaoka completed the classification of spherical tilings by congruent triangles. Using their result, Akama and Sakano recently completed the classification of spherical tilings by congruent quadrangles that can be divided into two congruent triangles.
In this talk we will explain the planned approach to classify the remaining spherical tilings by congruent quadrangles and we will give some results which have been obtained at this point.