

Rhombus tiling of even-sided polygons and quardangulations on the projective plane

Atsuhiko Nakamoto*, Yokohama National University

We first prove that every even-sided regular polygon admits a tiling by rhombi, and then introduce several fundamental facts for such tilings. Finally, we prove that every rhombus tiling of a regular $2k$ -gon has a one-to-one correspondence with (Q, C) , where Q is a certain quadrangulation on the projective plane and C is a non-contractible k -cycle of Q .

Rhombus tiling, regular polygon, quadrangulation, projective plane