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Ryuhei Uehara* (uehara@jaist.ac.jp), School of Information Science, JAIST, Nomi 1-1, Ishikawa 923-1292, Japan. *Recent results on common developments of tetramonohedron and other solids.*

In general, it is not known the relationship between a polygon P and a polyhedron Q that can be folded from P . Only exception is that P is a kind of p2 tiling if and only if Q is a tetramonohedron which consists of four congruent triangles. We have investigated polygons P that can be folded into two or more convex polyhedra. In this talk, we focus on the polyhedra that can be folded from a p2 tiling which is a development of a tetramonohedron. We summarize recent results: (1) We classify Johnson solids whether whose edge developments can fold into regular tetrahedra or not. Some Johnson solids have edge developments that can fold into regular tetrahedra in two or more different ways. We also give the proof that states the other Johnson solids have no such edge developments. (2) We proposed an algorithmic way that generates a polygon that can fold into regular cube and "almost regular" tetrahedron. The error of this almost regular tetrahedron can be bounded above by $2.89200 \times 10^{-1796}$. Some open problems will be also presented. (Received September 09, 2015)