

**Symmetric and self-dual spherical embeddings with all
vertices of degrees 3, 4 and 5**

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We describe an approach to constructing spherical graph embeddings in which all vertices are of degrees 3, 4, and 5 and all faces are quadrangular, in terms of regions of expansion and contraction. Of particular interest is a useful "diagonal metric." We describe these constructions more explicitly for the cases when there are exactly two vertices of degree 5 and some requirement of cellular symmetry.