

Review of: "A New Family of Solids: The Infinite Kepler-Poinsot Polyhedra"

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Potential competing interests: No potential competing interests to declare.

Author combines the principle of intersecting faces (by Kepler and Poinsot) with the idea of infinite constructions (by Coxeter and Petrie) to find another regular polyhedron and its dual. The representations provided are accurate and very nice. The open-faces expedient helps the reader to better grasp duals even if one has to pay attention to the case of star polygons or intersecting polygons where such representation can be sometime misleading.

In relation to what Paolo Piccinni posted about the possibility of carrying out in higher dimension the problem, I want to suggest the paper <https://doi.org/10.1016/j.matpur.2022.05.014> where (the vertexes of) Platonic Solids in general dimensions, (modulo the unexpected exception of the three particular Platonic Solids of the dimension $N=4$, the 4-D Polytopes 24-cell, 600-cell and 120-cell) have been characterized as the support of measures which satisfy suitable constraints based on the notion of higher order barycenters.

Moreover, in relation to [Peichang Ouyang](#)'s suggestion to provide also a 3-D printable model, I can propose, as a further step, the study the strength properties of the resulting sponge structure with respect to both strain and stress.

Finally, I completely agree with the comments of Daniel Pellicer <https://www.qeios.com/read/RCVQ9P> about the opportunity not to call this object a regular polyhedron and instead to call it a regular compound.