

Review of: "The Eisenlohr-Farris algorithm for fully transitive polyhedra"

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Review of "The Eisenlohr-Farris algorithm for fully transitive polyhedra" by Eric Pauli Perez

this paper gives in a very concise way, an excellent review of classification of all geometric fully transitive polyhedra in \mathbb{E}^d . The paper is very honestly written and refers correctly to previous theoretical basic works, in particular to L. Farris pioneer work and to J.M. Eisenlohr's dissertation under the supervision of B. Grünbaum.

In this context, the author describes the algorithm contributed to Farris and Eisenlohr, initially developed to generate all fully transitive polyhedra in any dimension $d \geq 2$.

Till this point, the paper looks like a review. But any general theoretical approach needs to be specifically applied to a given context for two reasons: First, the application to a specific case, of a general theory, is usually far from obvious and usually clarify the theoretical abstraction. Second, the case study itself, if it is correctly chosen, gives useful results to non pure mathematicians. This effort is not always done, and many valuable theories are not fully used in practice due to this missing link.

In this paper, beyond the theoretical context, the author makes the effort of specifically applying the Eisenlohr-Farris algorithm to the specific case of 3D crystallographic group. In this context, any choice of a vertex with a fixator having 8 elements, determines the corresponding vertex figure and points out the associated fully 3D geometric transitive polyhedron.

The paper is very well written and from my point of view, is perfectly correct. However, at my opinion, the abstract is misleading and does not reflect at all the real work of this paper.