

1110-05-160

Art M. Duval, Bennet Goeckner, Caroline J. Klivans and Jeremy L. Martin*

(jlmartin@ku.edu), 405 Snow Hall, 1460 Jayhawk Blvd., Lawrence, KS 66045. *New approaches to conjectures on decompositions of simplicial complexes*. Preliminary report.

A simplicial complex Δ is *partitionable* if its face poset decomposes into the disjoint union of Boolean intervals, each headed by a facet. Partitionability can be seen as a weakening of shellability that provides a similar combinatorial interpretation for the h -vector of Δ . Garsia and Stanley (independently) conjectured that every Cohen-Macaulay simplicial complex is partitionable; a related question of Stanley's is whether a k -uply acyclic complex can be decomposed into Boolean intervals of rank k . We describe an approach to these problems from the point of view of simplicial trees, as well as some relevant examples and partial results. (Received February 18, 2015)