

A combinatorial characterization of handle decompositions

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We show that for any manifold M with boundary, M admits a handle decomposition into handles of index at most k if and only if M has a triangulation in which all $(d-k-1)$ -faces are on the boundary. This solves a conjecture by Ed Swartz and a problem by Gil Kalai on the g -vector. This is joint work with Karim Adiprasito.

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