Convex triangulations

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Abstract: We investigate the beautiful combinatorial properties of those (abstract) simplicial complexes that admit a convex geometric realization in R^d. Topologically, all these complexes are triangulated balls. Our main result is that every convex d-complex becomes shellable, after at most $d-2$ barycentric subdivisions. This yields a new, simpler way to define "PL balls" (or ("PL manifolds").
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