Edge-Unfolding Nearly Flat Prismatoids

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A 3-Prismatoid P is the convex hull of two convex polygons A, B which lie in parallel planes $H, H' \subset \mathbb{R}^3$, respectively. Let A' be the orthogonal projection of A onto H'. Extending techniques introduced by Joseph O'Rourke [1], we show that P can be edge-unfolded if the boundaries of A' and B intersect in at most two points and P is sufficiently flat, that is, if the distance between H and H' is sufficiently small. Both conditions can be relaxed by imposing structural constraints on A and B.

References

[1] J. O'Rourke, Edge-Unfolding Nearly Flat Convex Caps, *34th International Symposium on Computational Geometry (SoCG 2018)*, pp. 64:1–64:14.