

Moduli spaces of polygons and deformations of polyhedra with boundary

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Given a polyhedral surface with triangular faces with a connected boundary, one might want to look into the space P of all its isometric realization in \mathbb{R}^3 considered up to isometries of \mathbb{R}^3 . On the other hand, the space L of realizations of a polygonal path up to isometries of \mathbb{R}^3 famously possesses a symplectic (and even Kähler) structure, due to Kapovich-Millson. We studied the symplectic geometric properties of the natural forgetting map δ from P to L (of a polygon isomorphic to the boundary). We established that δ is isotropic. When the surface is a generic polyhedral disk, δ is also Lagrangian. We give a solution of the problem of Richard Kenyon about domes spanning integral curves as an application of this result. This is a joint work with Sasha Anan'in.

References

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