SIDE 14.2

Contribution ID : 71

How discrete integrable systems helped to solve a classical problem in differential geometry

Tuesday 20 Jun 2023 at 17:00 (00h30')

Content :

We consider a classical problem in differential geometry, known as the Bonnet problem, whether a surface is characterized by a metric and mean curvature function. We explicitly construct a pair of immersed tori that are related by a mean curvature preserving isometry. This resolves a longstanding open problem on whether the metric and mean curvature function determine a unique compact surface. Discrete integrable systems and discrete differential geometry are used to find crucial geometric properties of surfaces. This is a joint work with Tim Hoffmann and Andrew Sageman-Furnas.

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