



Technische Universität Wien
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Einladung

zu einem

Vortrag

von

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Pseudo-triangulations, rigidity for the study of linkages

Zeit: Donnerstag, 2.8.2007, 16.15 Uhr

Ort: Dissertantenzimmer des Instituts für Geometrie

Wiedner Hauptstraße 8-10, 8. Stock, Turm A (grün)

Abstract: A (pointed) pseudo-triangulation is a planar embedded graph with the property that every vertex is incident to an angle (spanned by two consecutive incident edges) larger than 180 degrees. When viewed as bar-and-joint frameworks, pseudo-triangulations are generically isostatic. It turns out that they have even stronger properties: they are ***always*** infinitesimally rigid, and, when a convex hull edge is removed, they become flexible mechanisms with one degree of freedom which move ***expansively***: no pair of vertices moves closer together. Using this property, a solution to the Carpenter's Rule Problem is described: a planar polygon, viewed as a bar linkage, is moved to convex position via a finite sequence of motions, each one induced by a pseudo-triangulation mechanism, without producing any collisions along the way.

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