عنوان مقاله:

A convex combinatorial property of compact sets in the plane and its roots in lattice theory

محل انتشار:

تعداد صفحات اصل مقاله: 36

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خلاصه مقاله:

K. Adaricheva and M. Bolat have recently proved that if $\mathcal U_\circ$ and $\mathcal U_\backslash$ are circles in a triangle with vertices $A_\circ, A_\backslash, A_\Upsilon$, then there exist $j\in \{\circ,\backslash,\Upsilon\}$ and $k\in\{\circ,\backslash\}$ such that $\mathcal U_{\backslash-k}$ is included in the convex hull of $\mathcal U_k\cup(\{A_\circ,A_\backslash, A_\Upsilon\}\setminus\{A_j\})$. One could say disks instead of circles.Here we prove the existence of such a j and k for the more general case where $\mathcal U_\circ$ and $\mathcal U_\backslash$ are compact sets in the plane such that $\mathcal U_\backslash$ is obtained from $\mathcal U_\circ$ by a positive homothety or by a translation. Also, we give a short survey to show how lattice theoretical antecedents, including a series of papers on planar semimodular lattices by G. Grätzer and E. Knapp, lead to our result.

کلمات کلیدی:

Congruence lattice, planar semimodular lattice, convex hull, compact set, linebreak circle, combinatorial geometry, abstract convex geometry, anti-exchange property

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