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(Generalized) planar Turán number of cycles

Let $\mathrm{ex}_P(n, T, H)$ denote the maximum number of copies of T in an n-vertex planar graph which does not contain H as a subgraph. If $T = K_2$ then $\mathrm{ex}_P(n, T, H)$ is the well studied function, the planar Turán number of H, denoted by $\mathrm{ex}_P(n, H)$. If there is no forbidden subgraph H then we get the generalized planar Turán number of T. In this lecture, we determine or estimate these (generalized) planar Turán numbers when T or H is a given short cycle.

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