$(3,1)^*$-choosability of planar graphs

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(joint work with André Raspaud and Weifan Wang)

An $(L,d)^*$-coloring is a mapping π that assigns a color $\pi(v) \in L(v)$ to each vertex $v \in V(G)$ so that at most d neighbors of v receive color $\pi(v)$. A graph G is said to be $(k,d)^*$-choosable if it admits an $(L,d)^*$-coloring for every list assignment L with $|L(v)| \geq k$ for all $v \in V(G)$.

In this talk, firstly, I will show some known results on improper list coloring of (planar) graphs with some restrictions. Then, I will give a short proof of our recent result: every planar graph without adjacent triangles and 6-cycles is $(3,1)^*$-choosable. This partially answers the question proposed by Xu that every planar graphs without adjacent triangles is $(3,1)^*$-choosable.