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On triangulated common graphs

A graph H is common if the number of monochromatic copies of H in a 2-edge-colouring of K_N is minimised by the random colouring. Collecting new examples for common graphs had not seen much progress since 1990s, although very recently, a few more graphs are verified to be common by the computer-assisted flag algebra method or the recent progress on Sidorenko's conjecture. We give a new class of non-bipartite common graphs without using computers. In particular, we prove that triangle trees and octahedrons are common. Joint work with Jan Volec.