

Edge colorings of connected graphs with as many colors as possible which forbid rainbow cycles

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It is well known that the greatest number of colors appearing in a rainbow-cycle-forbidding edge coloring of a connected graph on n vertices is $n - 1$. In previous work it has been shown that for graphs in certain classes, these colorings are all obtainable in a certain way that permits classification: for instance, it is known that the essentially different such colorings of K_n with $n > 1$ are in one-to-one correspondance with the full binary trees with n leaves. Here we extend all previous results in this vein to all non-trivial connected graphs.

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