
SHANNON OGDEN, University of Victoria

The Rainbow Connection

Given a graph H , an edge-coloured graph G is H -rainbow saturated if it does not contain a rainbow copy of H , but the addition of any non-edge in any colour creates a rainbow copy of H . The rainbow saturation number, denoted by $\text{rsat}(n, H)$, is the minimum number of edges among all H -rainbow saturated edge-coloured graphs on n vertices. We will prove that, for any non-empty graph H , the rainbow saturation number is linear in n . This confirms a recent conjecture of Girão, Lewis, and Popielarz. Based on joint work with Natalie Behague, Tom Johnston, Shoham Letzter, and Natasha Morrison.