Circuit Double and locally Tait colourings

Tommy R. Jensen
Universität Klagenfurt
Austria

Abstract

It has been suggested that every 2-edge-connected graph may have its edges double covered by circuits, even when any one circuit of the graph has been fixed in advance. This open problem reduces to cubic graphs. For those cubic graphs that allow Tait colourings, i.e. proper 3-edge-colourings, it is easy to solve. The talk will describe a stronger variation of this problem. In the case of a fixed Hamilton circuit our new version can be solved by applying proper edge colourings that may use more than three colours globally, yet locally they are similar to Tait colourings. Colourings of this type have the advantage that they occur also in many cubic graphs that are not Tait colourable, possibly even in all cubic graphs.