

## Borsuk-type graph families

Michael Stiebitz (Technische Universität Ilmenau)

In the talk we discuss homomorphism relations between various types of graph families that are closely related to the Borsuk–Ulam theorem. The most popular such families are the Kneser family, the Schrijver family, the Mycielski family, the Gyárfás family and the Lovász–Borsuk family. The figure below shows the Gyárfás graph  $GY(k, \ell)$  for  $(k, \ell) = (4, 1)$  together with a canonical coloring with four colors, which has an additional coloring property. However, to show that this graph has chromatic number 4 is a non-trivial task.

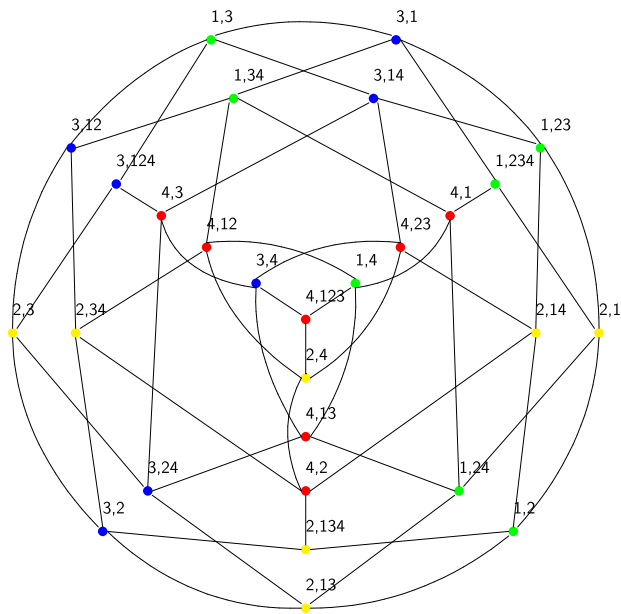


Figure 1: The Gyárfás graph  $GY(4, 1)$ .