

# **Reducing graphs by involutions**

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We are given a graph, now pick any involution and delete all of the vertices which are moved by this involution. Repeat with the new graph until your current graph is involution-free. This involution-free graph is uniquely defined (up to isomorphism) by the original, ie, it is independent of the choice of involution at each stage. This is proved using a lemma of Newman on the confluence of reduction systems.