Computing circular flow number of a cubic graph

Robert Lukoťka

We describe a practical algorithm that either determines the circular flow number of a bridgeless cubic graph or says that the circular flow number is greater than 5 (thus the graph is a counterexample to Tutte's 5flow conjecture). The running time of the algorithm is $O(1.6^{|V(G)|})$.

Open problem:
Signed graph (G, σ) is k-colourable, if there exists a vertex colouring using elements of Z_k (or sometimes $Z_{k+1} - \{0\}$) such that for every positive edge its endvertices do not have the same colour and for every negative edge its endvertices do not have opposite colours. A graph is k-critical if it is k-colourable and removing any edge or vertex decreases the chromatic number. We have quite good idea how sparse the sparsest k-critical non-signed graphs are. What about signed graphs?