Benzenoid graphs are 2-connected subgraphs of the hexagonal lattice so that every bounded face is a hexagon. The vertex set of the *resonance graph* of a benzenoid graph G consists of all 1-factors of G, and two 1-factors are adjacent whenever one can be obtained from the other by rotating the edges of a single bounded face. In other words, two 1-factors are adjacent if their symmetric difference is the edge set of a bounded face of G.

Problem: *characterize resonance graphs of benzenoid graphs.*