Summary: We show that any planar drawing of a forest of three stars whose vertices are constrained to be at fixed vertex locations may require \( \Omega\left(\frac{n^2}{3}\right) \) edges each having \( \Omega\left(\frac{n}{3}\right) \) bends in the worst case. The lower bound holds even when the function that maps vertices to points is not a bijection but it is defined by a 3-coloring. In contrast, a constant number of bends per edge can be obtained for 3-colored paths and for 3-colored caterpillars whose leaves all have the same color. Such results answer to a long standing open problem.

For the entire collection see [Zbl 1381.68007].

MSC:

- 68R10 Graph theory (including graph drawing) in computer science
- 68U05 Computer graphics; computational geometry (digital and algorithmic aspects)

Full Text: DOI arXiv