

# Matroid Tree-width

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**Abstract.** Tree-width and tree decompositions of graphs have found many important applications in graph theory research and also in algorithm design. We show that tree-width can be defined without reference to graph vertices, and hence, analogously to a similar notion of branch-width, the notion of tree-width naturally extends to matroids. (This definition is based on an original unpublished idea of Jim Geelen.) We prove that the tree-width of a graphic matroids is equal to that of its underlying graph.