

# Matroid 3-connectivity and branch width

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We prove that, for each nonnegative integer  $k$  and each matroid  $N$ , if  $M$  is a 3-connected matroid containing  $N$  as a minor, and the branch width of  $M$  is sufficiently large, then there is a  $k$ -element subset  $X$  of  $E(M)$  such that one of  $MX$  and  $M/X$  is 3-connected and contains  $N$  as a minor.

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