Title: 3-connected Binary and Regular Matroids without Certain Minors

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Abstract: We characterize the binary and regular matroids without a certain minor N for various small matroids N. For example, we characterize both the 3-connected and the internally 4-connected binary matroids without a minor isomorphic to the cycle matroid of the prism+e graph. Results of Ding and Liu and others on excluded-minor classes of graphs are extended to the class of regular matroids using matroid decomposition theory and the computer program MACEK.

This is joint work with Kayla Harville and Haidong Wu.