

## GRAPHIC SPLITTING OF COGRAPHIC MATROIDS

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### Abstract

In this paper, we obtain a forbidden minor characterization of a cographic matroid  $M$  for which the splitting matroid  $M_{x,y}$  is graphic for every pair  $x, y$  of elements of  $M$ .

**Keywords:** binary matroid, graphic matroid, cographic matroid, minor, splitting operation.

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### REFERENCES

- [1] Y.M. Borse, *Forbidden-minors for splitting binary gammoids*, Australas. J. Combin. **46** (2010) 307–314.
- [2] Y.M. Borse, M.M. Shikare and K.V. Dalvi, *Excluded-minors for the class of cographic splitting matroids*, Ars Combin. **115** (2014) 219–237.
- [3] H. Fleischner, *Eulerian Graphs and Related Topics* (North Holland, Amsterdam, 1990).
- [4] F. Harary, *Graph Theory* (Addison-Wesley, 1969).
- [5] A. Mills, *On the cocircuits of a splitting matroid*, Ars Combin. **89** (2008) 243–253.
- [6] J.G. Oxley, *Matroid Theory* (Oxford University Press, Oxford, 1992).
- [7] T.T. Raghunathan, M.M. Shikare and B.N. Waphare, *Splitting in a binary matroid*, Discrete Math. **184** (1998) 267–271.  
doi:10.1016/S0012-365X(97)00202-1
- [8] M.M. Shikare, *Splitting lemma for binary matroids*, Southeast Asian Bull. Math. **32** (2007) 151–159.
- [9] M.M. Shikare and G. Azadi, *Determination of the bases of a splitting matroid*, European J. Combin. **24** (2003) 45–52.  
doi:10.1016/S0195-6698(02)00135-X

- [10] M.M. Shikare and B.N. Waphare, *Excluded-minors for the class of graphic splitting matroids*, *Ars Combin.* **97** (2010) 111–127.
- [11] D.J.A. Welsh, *Matroid Theory* (Academic Press, London, 1976).

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