

## On semiextensions and cycle double covers

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**Abstract.** An extension of a circuit  $C$  is a circuit  $D \neq C$  such that  $D$  contains all the vertices of  $C$ . Fleischner showed there are cubic graphs with circuits which have no extensions. We introduce the concept of a semiextension, which is a circuit  $D$  that contains some but not necessarily all of the vertices of  $C$ , and show that if every circuit has a semiextension, then the strong cycle double cover conjecture follows.