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*Large Circuit Pairs in Matroids*  
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Scott Smith conjectured in 1979 that two distinct longest cycles of a  $k$ -connected graph meet in at least  $k$  vertices when  $k$  is at least 2. This conjecture is known to be true for  $k$  not exceeding 10. Only the case  $k$  not exceeding 6 appears in the literature, however. Reid and Wu generalized Smith's conjecture to  $k$ -connected matroids by considering largest circuits. The case  $k = 2$  of the matroid conjecture follows from a result of Seymour. In addition, McMurray, Reid, Sheppardson, Wei, and Wu established an extension of the matroid conjecture for  $k = 2$  and proved it for cographic matroids when  $k$  does not exceed 6. In his Ph.D. dissertation, McMurray established the matroid conjecture for matroids of circumference four. I establish Reid and Wu's conjecture for several classes of matroids which include those that have connectivity three, some structured results for connectivity four, circumference five, and spanning circuits. This is joint work with Manoel Lemos, James Reid, and Haidong Wu.