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Connected Hyperplanes in Binary Matroids

As many simple cosimple connected matroids have no connected hyperplanes, it is a somewhat surprising result (due to Seymour) that simple cosimple connected binary matroids have at least one connected hyperplane. We strengthen this result to prove such matroids have at least four connected hyperplanes. In addition, we show the bound is best possible. This extends related graph theory results of Thomassen and Toft and of Kaugars.