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TP_k completion of partial matrices with one unspecified entry

An $m \times n$ matrix is called TP_k if every minor of size at most k is positive. The TP_k completion problem for patterns of specified entries is considered. For a given pattern with one unspecified entry, the minimal set of conditions characterizing TP_k completability is given. These conditions are finitely many polynomial inequalities in the specified entries of the pattern. This is joint work with C. Johnson and V. Akin.