1 Bounds for the Perron root using max eigenvalues

By Ludwig Elsner, P van den Driessche.

Using the techniques of max algebra, a new proof of Al'pin's lower and upper bounds for the Perron root of a nonnegative matrix is given. The bounds depend on the row sums of the matrix and its directed graph. If the matrix has zero diagonal entries, then these bounds may improve the classical row sum bounds. This is illustrated by a generalized tournament matrix.