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Isabel Giménez (igimenez@mat.upv.es), Institut de Matemàtica Multidisciplinar, Universitat Politècnica de València, 46022 València, Spain. *Combined Matrices of sign regular matrices.*

The combined matrix of a nonsingular matrix A is the Hadamard (entry wise) product $C(A) = A \circ (A^{-1})^T$. Since each row and column sum of $C(A)$ is equal to one, the combined matrix is doubly stochastic when it is nonnegative. In this work, we study the nonnegativity of the combined matrix of sign regular matrices, based upon their signature. In particular, a few coordinates of the signature ε of A play a crucial role in determining whether or not $C(A)$ is nonnegative. (Received September 02, 2016)