Title of talk :

On a face of the polytope of doubly stochastic matrices

Abstract :

We consider a face of the polytope of doubly stochastic matrices, whose nonzero entries coincide with that of

$$V_{l,m,n} = \begin{pmatrix} 0_{l,l} & 0_{l,m} & J_{l,n} \\ 0_{m,l} & I_m & J_{m,n} \\ J_{n,l} & J_{n,m} & J_{n,n} \end{pmatrix}.$$

Here $0_{r,s}$ is the $r \times s$ zero matrix, $J_{u,v}$ denotes the $u \times v$ matrix all of whose entries are *1* and I_m is the identity matrix of order m. We determine the minimum permanent and minimizing matrices on this face of the polytope of doubly stochastic matrices. This research contributes towards solution of two problems from Minc's well-known lists of unsolved problems on permanents.