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**Selcuk Koyuncu\*** (skoyuncu@ung.edu) and **Lei Cao** (leicaomath@gmail.com). *Sub-defect of Product of Doubly Substochastic Matrices.*

The sub-defect of an  $n \times n$  doubly substochastic matrix  $S$ , denoted by  $sd(S)$ , is defined to be the smallest integer  $k$  such that there exists an  $(n + k) \times (n + k)$  doubly stochastic matrix containing  $S$  as a submatrix. Let  $A$  and  $B$  be arbitrary doubly substochastic matrices. We show that  $AB$  is also a doubly substochastic matrix and  $\max\{sd(A), sd(B)\} \leq sd(AB) \leq \min\{n, sd(A) + sd(B)\}$ . (Received September 20, 2016)