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**Title:** On EP-nilpotent decomposition in \*-rings

**Author(s):** Gregor Dolinar, Janko Marovt and Dijana Mosić

Let  $\mathcal{R}$  be a unital ring with involution. We generalize the notion of the EP-nilpotent decomposition from the set of all  $n \times n$  complex matrices to the set of all core-EP invertible elements in  $\mathcal{R}$ , and study certain relations in  $\mathcal{R}$  that are based on the EP-nilpotent decomposition. The notions of the ES and EN partial orders are extended to  $\mathcal{R}$ . Properties of these relations are investigated and new characterizations are presented.

**Address:**

Gregor Dolinar  
Faculty of Electrical Engineering  
University of Ljubljana  
Tržaška cesta 25  
SI-1000 Ljubljana  
Slovenia

and

IMFM  
Jadranska 19  
SI-1000 Ljubljana  
Slovenia

**Address:**

Janko Marovt  
Faculty of Economics and Business  
University of Maribor  
Razlagova 14  
SI-2000 Maribor  
Slovenia

and

IMFM  
Jadranska 19  
SI-1000 Ljubljana  
Slovenia

**Address:**

Dijana Mosić  
Faculty of Sciences and Mathematics  
University of Niš  
P. O. Box 224  
18000 Niš  
Serbia