

ON COMPARISONS OF COHERENT SYSTEMS VIA DYNAMIC  
SYSTEM SIGNATURE

Mehmet Güngör<sup>1</sup>, Ahmet Demiralp<sup>2</sup>, Yunus Bulut<sup>3</sup>, M.Şamil Şık<sup>4</sup>

<sup>1,2,3,4</sup> *Department of Econometrics, Inonu University, Malatya, Turkey*

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### Abstract

System signature is extremely useful tool for comparing of coherent systems. Let  $X_i$  's be independent and identically distributed  $n$ -components lifetimes of a system with  $T$  lifetime. The signature of the system is  $\mathbf{s} = (s_1, s_2, \dots, s_n)$  where  $s_i$  is equal to probability of event  $(T=X_{i:n})$  and  $X_{i:n}$  is the  $i$ th order statistics of  $X_i$  's. Also, dynamic system signature is the truncated form of system signature when exactly  $i$  components of the system have failed at time  $t$ . In this study, comparison of new better than used (NBU) and uniformly new better than used (UNBU) properties of aging systems with dynamic system signature by stochastic, hazard rate and likelihood ratio orderings are investigated.

**Keywords:** Coherent system; Order statistics; Signature; Aging; NBU, UNBU; Stochastic, Hazard rate and Likelihood ratio orderings

### References

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<sup>1</sup>First Author's e-mail: mgungor44@gmail.com

<sup>2</sup>Second Author's e-mail: ahmt.dmrp@gmail.com

<sup>3</sup>Third Author's e-mail: ybulut79@gmail.com

<sup>4</sup>Fourth Author's e-mail: mhmd.sml85@gmail.com