

**Downey, Peter J.; Maier, Robert S.**

**Orderings arising from expected extremes, with an application.** (English) [Zbl 1400.60074](#)

Shaked, Moshe (ed.) et al., Stochastic inequalities. Collection of papers of conference, one of the 1991 AMS-IMS-SIAM joint summer research conferences, Seattle, WA, USA, July 1991. Hayward, CA: IMS, Institute of Mathematical Statistics (ISBN 0-940600-29-3). IMS Lect. Notes, Monogr. Ser. 22, 66-75 (1992).

Summary: We bound the expected maximum order statistics  $\{EX_{(n)}\}_{n=1}^{\infty}$  of a d.f.  $F_X$  both above and below. Our results have an interpretation in terms of stochastic orderings  $\leq_e$  and  $\leq_{we}$  defined as follows:  $F_X \leq_e F_Y$  iff  $EX_{(n)} \leq EY_{(n)}$  for all  $n$ , and  $F_X \leq_{we} F_Y$  iff  $EX_{(n)} \leq EY_{(n)}$  for  $n$  sufficiently large. We apply our results on  $\leq_{we}$  to the end-to-end delay in a resequencing M/G/ $\infty$  queue

For the entire collection see [\[Zbl 0920.00039\]](#).

**MSC:**

- [60G70](#) Extreme value theory; extremal stochastic processes
- [60E05](#) Probability distributions: general theory
- [60K25](#) Queueing theory (aspects of probability theory)

Cited in **2** Documents

**Keywords:**

[extreme order statistics](#); [stochastic orderings](#); [stochastic inequalities](#); [resequencing delay](#); [heavy traffic limit](#)

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