Erratum

Correction to “Prophet inequalities for averages of independent non-negative random variables”

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As pointed out by Rainer Wittmann, the proof of Theorem 1.1 [1] is valid for $n \leq 3$, but not for general n , although his numerical experiments strongly support validity for $n = 4, 5$ as well. The argument given for equation (17) of Lemma 3.3 in [1] is incorrect, and at this time neither counterexamples nor proofs are known for either Lemma 3.3 or Theorem 1.1. Thus the best known prophet constant for the setting of Cesaro averages of independent nonnegative random variables is that (≤ 3.15) obtained by Wittmann in [3] and [4], which improve the original discovery $2(1 + \sqrt{3})$ of Krengel and Sucheston in [2]. Wittmann’s result in [4] contains the simplest proof so far, and is stronger in that the same inequality is shown to hold for the class of threshold stopping times.

References

1. Hill, T.: Prophet inequalities for averages of independent non-negative random variables. *Math. Z.* **192**, 427–436 (1986)
2. Krengel, U., Sucheston, L.: On semiamarts, amarts and processes with finite value. *Adv. Probab. Related Topics* **4**, 197–266 (1978)
3. Wittmann, R.: On the prophet inequality for subadditive processes. *Stoch. Anal. Appl.* **10**, 613–621 (1992)
4. Wittmann, R.: Prophet inequalities for dependent random variables. *Stoch. Stoch. Rep.* **52**, 283–293 (1995)