On the property of decreasing inverse failure rate for random sums and its applications in applied probability models

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SUMMARY

In this talk we will study the so-called inverse decreasing failure rate property for random sums. This property means that their cumulative distribution function is logarithmically concave. We will show that this property holds under quite general conditions, including in particular already known results for binomial, geometric or Poisson random sums. We will see the interest of this property in several applications, in particular in actuarial or inventory models. With respect to the latter, we will show the importance of this property in guaranteeing the existence of optimal policies (minimizing the cost function).

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