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Abstracts of Short Communications and Posters

Section:

12. Probability and Statistics

1991 MS Classification: 60, 65, 68, 90
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On Some Extremal Probabilities Repartitions Used In Renewal Process

The results presented in this paper are original and they point out the following two aspects:
1) If the repartition function or the breakdown curve are punctually known or the average value and dispersion can be estimate accurately enough, then the minimal repartitions have a precise analytical expression and the breakdown point is exactly known. The problems can be solved by using some results of extreme calculus.
2) If an efficiency criterion is adopted, functional is defined by the equality:

$$f\left(x,p\left(t\right)\right)=\int_{0}^{x}p\left(t\right)dt+mp\left(x\right)$$

then the guaranteed optimal points and values (in the minmax sens) are searched for:

$$V_1=\max_{x}\min_{p(t)} f\left(x,p\left(t\right)\right)\ ,\ V_2=\min_{p(t)}\max_{x} f\left(x,p\left(t\right)\right)$$

The solving of this problems is extremely difficult and can be achieved by using the results of games theory as well as Pontreaghin's maximum principle. The solutions are approximately calculated, but errors are completely assessed (which points out the original character of the paper).
Reference: Mitran, I. -*Optimalite minimax*- AMSE, France, 1992.