GENERAL GAMMA APPROXIMATING OPERATORS

Vasile Mihesan

Department of Mathematics, University of Cluj Napoca, Romania
[vasile.mihesan@math.utcluj.ro]

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The most general form of the gamma distribution is the generalized gamma distribution (GG). It was introduced by Stacy [1], in order to combine the power of two distribution: the gamma distribution and the Weibull distribution.

The generalized gamma distribution is a three-parameter distribution, with the probability density function (p.d.f.) given by

$$GG(t;\alpha,\beta,\gamma)=\frac{\gamma\beta^{\alpha\gamma}}{\Gamma(\alpha)}t^{\gamma\alpha-1}e^{-(\beta t)^{\gamma}} \tag{1}$$

for $t>0$, where $\alpha>0$ and $\gamma>0$ are shape parameter and $\beta>0$ is rate parameter.

By using the generalized gamma distribution (1) we shall define a general linear gamma transform $\Gamma^{(a)}_{\alpha,\beta,\gamma}$, $a\in\mathbb{R}$ from which we obtain as special cases the generalized first kind transform. For different value of α,β,γ and a we obtain generalization of several gamma type operators studied in literature.

REFERENCES

[1] E.W. Stacy, *A generalization of gamma distribution*, Ann. Math. Statist., 33, 1962, pp. 1187-1192.