LIST OF ABBREVIATIONS and NOTATIONS

ABBREVIATIONS

rv/ rvs	Random variable/ Random variables
iid	Independently and identically distributed rvs
APGF	Alternate probability generating function
cf	Characteristic function
df	Distribution function
pdf	probability density function
pgf	probability generating function
pmf	probability mass function
SD	Self-decomposable
min-SD	min-self-decomposable
max-SD	max-self-decomposable
DSD	discrete self-decomposable
GID	Geometrically infinitely divisible
G(S)S	Geometrically strictly stable
DGS	Discrete geometrically stable
DGSS	Discrete geometrically semi-stable
GMS	Geometrically max-stable
AR(p)	Autoregressive process of order p
EAR(1)	Exponential AR process proposed by Gaver and Lewis (1980)
GAR(1)	Gamma AR process proposed by Gaver and Lewis (1980)
INAR	Integer valued AR process as introduced by McKenzie (1985) / Al-Osh and Alzaid (1987)
MAXAR	AR process in the scheme of maxima

MINAR	AR process in the scheme of minima
ARP(1)/MINARP(1)	A pareto process proposed by Yeh et al. (1988)
ARSP(1)/ MINARSP(1)	A Semi-Pareto process proposed by Pillai(1991).

NOTATIONS

$\mathbb{N}$	The set {1, 2, ...}
$\mathbb{N}_0$	The set {0, 1, ...}
$\mathbb{R}$	Set of real numbers
$\mathbb{R}^+$	The interval $[0, \infty)$
$\stackrel{d}{=}$	Equality in distribution
$F(x)$	$P(X \leq x)$, where X is distributed as F
$\bar{F}(x)$	$P(X > x)$, where X is distributed as F
ϕ_X or ϕ_F	cf of rv X or cf of distribution F
L_X or L_F	Laplace-Stieltjes transform of rv X or of distribution F
P_X or P_F	APGF of rv X or APGF of distribution F
Q_X or Q_F	pgf of rv X or pgf of distribution F
S_F	Support of F, i.e. the set on which F is concentrated
B(n,p)	*Binomial distribution with pmf* $f(x) = \binom{n}{x} p^x (1-p)^{n-x}$
$Be(\alpha, \beta)$	Beta distribution with pdf $f(x) = \dfrac{x^{\alpha-1}(1-x)^{\beta-1}}{B(\alpha, \beta)}$, $x \in (0, 1)$, $\alpha,\beta>0$

exponential(θ)	exponential distribution with pdf $f(x) = \frac{1}{\theta} e^{-x/\theta}$, $x > 0$, $\theta > 0$.
Ga(β, α)	Gamma distribution with Laplace transform $L(s) = \left(\frac{\alpha}{\alpha+s}\right)^{\beta}$
Geom(p)	Geometric distribution with pmf $f(x) = p(1-p)^x$, $x=0, 1, \ldots$; $p \in (0, 1]$
Geom^+(p)	Geometric distribution with pmf $f(x) = p(1-p)^{x-1}$, $x=1, 2, \ldots$; $p \in (0,1]$
NB(r, p)	Negative binomial distribution with pmf $f(x)=\binom{x+r-1}{x} p^r (1-p)^x$, $x=0,1,\ldots$; $p\in(0,1]$
P(σ, γ)	A Pareto distribution whose survival function is given by $\bar{F}(x) = \{1+(x/\sigma)^{1/\gamma}\}^{-1}$, $x \geq 0$, $\sigma,\gamma > 0$.
Poisson(λ)	Poisson distribution with pmf $f(x) = \frac{e^{-\lambda} \lambda^x}{x!}$, $x = 0, 1, \ldots$; $\lambda > 0$
SP(γ, β)	Semi-Pareto family defined at
*	Thinning operator defined by $\rho * X = \sum_{i=1}^{X} B_i$, where $\rho \in [0, 1]$, X is a rv with support $\mathbb{N}_0$, and B_i's are iid $B(1,\rho)$ rvs
\	Thicken~ing operator defined by Littlejohn (1992)
G(S)S(α, θ)	G(S)S law with Laplace transform $L(s) = (1+\theta s^{\alpha})^{-1}$
DGS(α, θ)	DGS law defined by APGF $P(s) = (1+\theta s^{\alpha})^{-1}$

GMS(α, θ)	GMS law defined by survival function $\bar{F}(x) = (1+\theta x^{\alpha})^{-1}$
$N(\rho)$	$Geom^{+}(\rho)$ random variable
$S_n(X)$	$\sum_{i=1}^{n} X_i$, X_i being independent copies of X
$S_W(X)$	$\sum_{i=1}^{W} X_i$, where X_i are independent copies of X and W is a rv independent of $\{X_i\}$