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List of Abbreviation

Artificial Bee Colony	ABC
Bacteria Foraging Algorithm	BFA
Chemical Reaction Optimization	CRO
Cuckoo Search Algorithm	CSA
Flexible AC Transmission Systems	FACTS
Genetic Algorithm	GA
Gravitational Search Algorithm	GSA
Grey Wolf Optimization	GWO
Honey Bee Algorithm	HBA
Kinetic Gas Molecular Optimization	KGMO
Line Loading	LL
Particle Swarm Optimization	PSO
Quasi-Oppositional Based Learning	QOBL
Quasi-Oppositional Chemical Reaction Optimization	QOCRO
Reactive Power Dispatch	RPD
Static VAR compensator	SVC
Strength Pareto Multi-Objective EvolutionaryAlgorithm	SPMOEA
Teaching Learning Based Optimization	TLBO
Thyristor Controlled Series Compensator	TCSC
Total Voltage Deviation	TVD
Unified Power Flow Controllers	UPFC

Nomenclature

P_{gi}	Active power generation
Q_{gi}	Reactive power generation
$Cost_a$	Cost of active power
$Cost_r$	Cost of reactive power
a_i, b_i and c_i	Cost Coefficients
N_L	Amount of load bus
V_i	load bus voltage
V_{ref}	reference voltage
P_{ij}	power flow at each line
P_{ijmax}	maximum power flow limit
L	total amount of transmission lines
G_{ij}	conductance of line i-j
δ_i and δ_j	voltage angle of ith and jth bus
ΔQ	Size of SVC
s	functional limit of the FACTS device
X_{Line}	transmission line reactance
$rTCSC$	Degree of composition by TCSC
P	Amount of particles
k	location of the agent
zp_j	specifies the kth agent position at dth dimension
T_j^d	k^{th}agent temperature at dimension d
b	Boltzmann constant
$pbest_j$	best previous location of jth gas molecule
$gbest_j$	best previous location of jth gas molecules
$E_1$and E_2	acceleration coefficients
w	inertia weight
$rand_j$	uniform random variable
z_{r+1}^j	Position of the molecule

a_j^d	acceleration of agent k in dimension d
fit_q	fitness value of the solution.
q	proportionality index of the quality of an egg
$nest_q$	New nest
S_{pq}	Step size
p&q	randomly chosen indexes
λ	Levy Coefficient
α	random number generated between $[-1,1]$
Γ	gamma function
X_{pq}^{gen+1}	Nest Location
pa	discovery rate