Particle swarm optimization algorithm with probabilistic restriction coefficient

Every *xij* is randomized according to normal distribution with mean and variance .

Let,

Of course, we have:

Let,

The closer to global best position ***p****g* the local best position ***p****i* is, the more dynamic the position ***x****i* is, which aims to exploration for converging to global optimizer. The farer to global best position ***p****g* the local best position ***p****i* is, the less dynamic the position ***x****i* is, which aims to exploitation for fast convergence.