

عنوان مقاله:

Novel Particle Swarm Optimization Algorithm Based on President Election: Applied to a Renewable Hybrid Power System Controller

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خلاصه مقاله:

Particle swarm optimization has been a popular and common met heuristic algorithm from its genesis time. However, some problems such as premature convergence, weak exploration ability and great number of iterations have been accompanied with the nature of this algorithm. Therefore, in this paper we proposed a novel classification for particles to organize them in a different way. This new method which is inspired from president election is called President Election Particle Swarm Optimization (PEPSO). This algorithm is trying to choose useful particles and omit functionless ones at initial steps of algorithm besides considering the effects of all generated particles to get a directed and fast convergence. Some preparations are also done to escape from premature convergence. To validate the applicability of our proposed PEPSO, it is compared with the other met heuristic algorithm including GAPSO, Logistic PSO, Tent PSO, and PSO to estimate the parameters of the controller for a hybrid power system. Results verify that .PEPSO has a better reaction in worst conditions in finding parameters of the controller

کلمات کلیدی:

Hybrid Optimization algorithm, Chaotic Function, Hybrid Power System, Particle Swarm Optimization Algorithm, President Election Algorithm

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