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Abstract

Artificial Immune System is applied to determine the optimal hourly schedule of power generation in a hydrothermal system. A multi-reservoir cascaded hydroelectric system with a nonlinear relationship between water discharge rate, net head and power generation is considered. The water transport delay between connected reservoirs is taken into account. The transmission losses are also taken into consideration using loss coefficients. The developed algorithm is illustrated for a test system and the test results are compared with those obtained by using differential evolution and evolutionary programming technique. From numerical results, it is seen that artificial immune system based approach provides better solution.

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Index Terms

Computer Science

Algorithms

Keywords

Hydrothermal scheduling cascaded reservoirs artificial immune system