The basic objective of Economic Dispatch (ED) of electric power generation is to schedule the committed generating unit outputs to meet the load demand at minimum operating cost subject to equality and inequality constraints. In recent years with increasing awareness about environmental issues this problem has taken an essential development i.e. economic dispatch now includes the dispatch of power to minimize pollutants (from fossil fuel power generating units), as well as to achieve minimum cost. This paper presents comparative study of two algorithms namely Particle Swarm Optimization (PSO) and Big Bang-Big Crunch Optimization (BB-BC) which are implemented on Environment Friendly BB-BC Optimized Economic Dispatch with Real and Reactive Power Constraints problem. It is shown that the performance of BB-BC method demonstrates superiority over PSO algorithm.

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Index Terms

Computer Science  Power Systems
Keywords
Particle Swarm Optimization  Big Bang–big Crunch  Economic Dispatch  Emission Dispatch
Fuel Cost Function
Total Emission Function
Penalty Factor