Economic Dispatch Solution Using Moth-Flame Optimization Algorithm

Mohd Herwan Sulaima¹, Zuriani Mustaffa², Muhammad Ikram Mohd Rashid¹, Hamdan Daniyal¹

¹ Faculty of Electrical & Electronic Engineering, Universiti Malaysia Pahang, 26600 Pekan, Pahang, Malaysia.

² Faculty of Computer Science & Software Engineering, Universiti Malaysia Pahang, 26300 Gambang, Pahang, Malaysia.

Abstract:
This paper proposes an application of a recent nature inspired optimization technique namely Moth-Flame Optimization (MFO) algorithm in solving the Economic Dispatch (ED) problem. In this paper, the practical constraints will be included in determining the minimum cost of power generation such as ramp rate limits, prohibited operating zones and generators operating limits. To show the effectiveness of proposed algorithm, two case systems are used: 6-units and 15-units systems and then the performance of MFO is compared with other techniques from literature. The results show that MFO is able to obtain less total cost than those other algorithms.

Keywords: Economic Dispatch, Moth-Flame Optimization, Nature Inspired Algorithms