TABLE II
COMPARISON OF SIMULATION RESULTS OF EACH METHOD CONSIDERING KRON'S LOSS FORMULA.

Unit	Lagrange	CFBPSO
1	33.4701	32.6788
2	64.0974	64.9599
3	55.1011	54.6249
Total Power (MW)	152.6686	152.2636
Loss (MW)	2.6686	2.2636
Total Cost ($/MWh)	1599.99	1596.86

Unless exhaustive testing of the solution space is performed, it is not known if this solution represents the global minimum solution. It is clear from these results however that CFBPSO performs better than other techniques for solving economic dispatch with losses.

VI. Conclusion

This paper presents enhancements to the CFBPSO method for solving the ED problem with transmission line losses equated using Kron's loss formula. The CFBPSO has shown its ability to find the global minimum in a 3-unit system and has shown that it can find a better global solution than Lagrange method. With the combination of CFBPSO's capability of avoiding local optima and its ability to exploit solutions where the gbest value is towards optimum the algorithm is very good at solving the ED problem.

CFBPSO must be capable of working in a practical environment, and as such a valve point effect with transmission losses should be included in future work.

VII. References

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