

Harmony search

Afshari et al. (2011) use harmony search for well-placement optimization.

Questions

1. Describe the well-placement problem. Why is optimization needed? Describe at least two metaheuristic algorithms beside harmony search that have been used for well-placement optimization. What were the results? What are the advantages and shortcomings of these methods?
2. Explain and implement the harmony search method. Test it on an artificial example and compare the results to those obtained by a known method.

References

- Afshari, S., Aminshahidy, B., and Pishvaie, M. R. (2011). Application of an improved harmony search algorithm in well placement optimization using streamline simulation. *Journal of Petroleum Science and Engineering*, 78:664–678.