

Oil production optimization

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Asadollahi et al. (2014) consider the optimization of oil production.

Questions

1. Explain the oil production problem and the need for optimization. Which methods have been used to solve such problems? Describe at least two and explain their advantages and shortcomings based on the reported results.
2. Among others, Asadollahi et al. (2014) use Hooke-Jeeves. Explain and implement the method. Apply it on the optimization problem in (Asadollahi et al., 2014) for at least 10 days. Explain the results. What are its advantages and shortcomings of the method?

References

Asadollahi, M., Naevdal, G., Dadashpour, M., and Kleppe, J. (2014). Production optimization using derivative free methods applied to Brugge field case. *Journal of Petroleum Science and Engineering*, 114:22–37.