عنوان مقاله:

Comparison of Novel Optimization Algorithms on Intelligent Well Production Performance

محل انتشار:

اولین کنفرانس رویکردهای نوین در نگهداشت انرژی (سال: 1390)

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خلاصه مقاله:

Oil production optimization is one of the main targets of reservoir management. Smart well technology gives ability of real time oil production optimization. Although this technology has many advantages; optimum adjustment or sizing of corresponding valves is its issue. In this research, we present comparison of CPU time of different optimization algorithms for optimum port sizing of three ICDs in a horizontal well. Three methods of Response Surface (RSM), Taguchi and Neural Network (NN) are employed for this study. In this work; Quadratic Programming (QP) and Non Linear Programming (NLP) is implemented in Response Surface and Taguchi methods respectively. Another optimization algorithm named Particle Swarm Optimization (PSO) is implemented in Neural Network method. The results show that the Neural Network- PSO and Response Surface Method- QP give better performance comparing with the other combinations.

کلمات کلیدی:

Inflow Control Device (ICD), Smart Well, Artificial Neural Network (ANN), Taguchi Method, Response Surface Method (RSM), Particle Swarm Optimization (PSO)

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