عنوان مقاله:

Directional Drilling Simulation by Artificial Intelligence Methods

محل انتشار:

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خلاصه مقاله:

Downhole drilling motors and rotary steerable systems can be used for directional drilling. These systems generally work by introducing an angular offset at or near the bit that causes the bit to drill in a deviated direction. An important aspect of selecting the appropriate drilling tool system is being able to predict the directional performance of the system in terms of the magnitude of the deviation that it will produce, known as the build or deflection rate, to achieve the desired well profile.Accurate prediction of build rates requires precise calculation of contact locations and forces that must be computed through more comprehensive analysis methods.The modeling of Bottom Hole Assembly (B H A) deflections in 2D and 3D using soft-string and stiff-string methods are set as the basis for neural network and fuzzy structure training data and then are used to predicate angle and depth of drilling tool.Results show that this artificial intelligence model has several advantages over the former, such as the significantly reducing time of calculation and error between available experimental data and AI models outputs.Also this AI-based framework efficiency is very well-suited for design engineering and real time simulation.

کلمات کلیدی:

.Bottom Hole Assembly , or deflection rate,soft-string , artificial intelligence