Construction of a Software Tool for Improving the Well Placement for the Development of a Mature Hydrocarbon Field Using Neurosumulation

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This work shows the development of a software tool that implement a neurosimulation technique for the well placement applied in developing a heterogeneous hydrocarbon field with an irregular geometry.

During the development of a hydrocarbon field the well placement is a major task, because a small change in location can make gains or losses during the remaining productive life of the field, the conventional methods of well placement are expensive and consume large amounts of time and computational effort, an alternative to this methods is neurosimulation, this technique forms a bridge between artificial neural networks (ANN) and numerical reservoir simulation (NRS). This work describes the development of a software tool that make use of the neurosimulation technique for well placement, through a graphical interface is possible input necessary data to run the program. The program output are the new well locations, with the option of visualize the results through graphics.

The software tool was developed using open source tools and free software, for example the Python programing language, to encourage their use and development in research, in academia and in hydrocarbon industry.

With the help of the software tool developed on this work is possible obtain in a simple way fast and accurate well locations for a given drilling plan during the development of a mature hydrocarbon field.