



Finding Oil

As high as gas prices are, they would be much higher without modern oil exploration techniques, which make operations more efficient (and cleaner). Drilling a well can cost 20 million dollars, so drillers now rely on mathematical models of reservoirs, rather than hunches, to choose sites. The models approximate a reservoir's characteristics from data collected using sound waves beamed underground, and from the resulting systems of nonlinear equations. In fact, one company estimates that it solves over 250,000 systems a day.

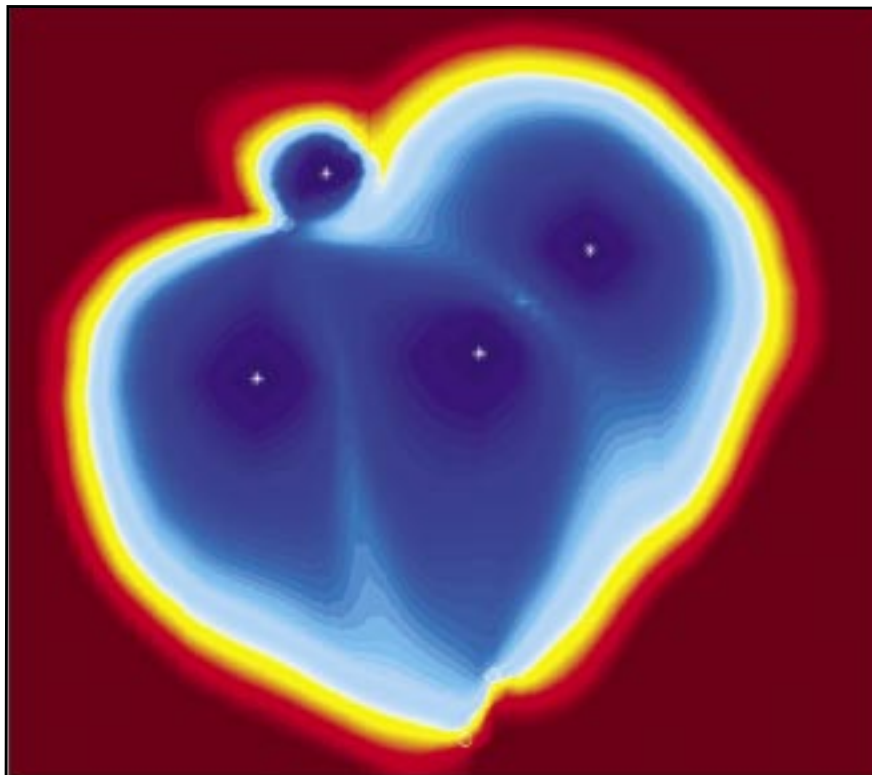


Image: Visualization of oil reservoir simulation (blue areas indicate areas of high water concentration, brown areas indicate areas of high oil concentration), courtesy of Mary F. Wheeler.