Latest Advances in Sucker Rod Beam Pump Automation

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Worldwide, as conventional oil resources are depleted, beam pumping system is becoming the most common type of artificial lift methods for onshore wells. With the growing number of beam pumped wells, the value of automation and real-time data is continuously increasing. Oil companies might have different views of the meaning of “automation”. Some companies will apply cycling timers and others will have a basic rod pump controller but the technology driver nowadays is to gather all possible data about and around the well in one smart well manager system. This smart system will use the gathered information to optimize the well by decreasing lifting costs and increasing production. It will not only rely on surface information but also uses intelligent downhole pump analysis and calculations to identify downhole conditions. Finally, all the information is transmitted to the field and main office over a SCADA system for 24/7 remote monitoring and control. Sucker Rod Well Automation is essential for the well operation as it plays a major role in the well optimization leading to less failure, less operation costs, less downtime and higher production accordingly. This presentation will discuss the latest technology in beam pump optimization, remote monitoring, and control. It will highlight the benefits achieved by applying downhole analysis control in beam pump controllers and variable speed drives, as well as the use of expert supervisory control software which analyzes the wells using artificial intelligence. Actual well data will be shown from successful field results.