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快报

核磁共振测井与核磁共振录井对比分析

袁祖贵

中国石化胜利石油管理局 石油工程管理处，山东 东营 257001

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摘要 石油工程中的核磁共振技术是利用油和水中的氢原子在磁场中具有共振并产生信号的特征来探测和评价岩石特性。核磁共振测井是在井筒中测量井周地层的物性参数，核磁共振录井是在地面（钻井现场）分析岩心、岩屑和井壁取心的物性参数（随钻分析）。对同一深度13口井中的核磁共振测井孔隙度、渗透率参数与核磁共振录井分析岩心、岩屑和井壁取心样品得到的孔隙度、渗透率参数进行对比分析表明，两者虽存在一定差异，但整体有较好的趋势一致性。

关键词 核磁共振 测井 录井 孔隙度 渗透率

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Comparative Analysis of Nuclear Magnetic Resonance Well Logging and Nuclear Magnetic Resonance Mud Logging

YUAN Zu-gui

Petroleum Engineering Management Division, Shengli Petroleum Administration, SINOPEC, Dongying 257001, China

Abstract The hydrogen atoms in oil and water are able to resonate and generate signals in the magnetic field, which is used by the NMR （nuclear magnetic resonance） technology in petroleum engineering to research and evaluate rock characteristics. NMR well logging was used to measure the physical property parameters of the strata in well bore, whereas NMR mud logging was used to analyze (while drilling) the physical property parameters of cores, cuttings and sidewall coring samples on surface (drilling site). Based on the comparative analysis of the porosity and permeability parameters obtained by NMR well logging and those from analysis of the cores, cuttings and sidewall coring samples by NMR mud logging in the same depth of 13 wells, these two methods are of certain difference, but their integral tendency is relatively good.

Key words nuclear magnetic resonance well logging mud logging porosity permeability

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通讯作者