

## 陀螺测斜仪小角度井斜角测量的姿态提取方法

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摘要：

针对陀螺测斜仪系统在小角度井斜角测量时存在测量精度低的问题，本文对其产生机理和形成原因作了详细分析，并推导了新的小角度井斜角测量的姿态提取方法。搭建基于高精度动调陀螺的随钻测斜仪产品原理样机，并利用高精度三轴转台反复多次模拟实际钻井施工中随钻测井过程，结果表明该方法可有效的提高陀螺测斜仪小角度井斜角随钻测量的解算精度。

关键词：陀螺测斜仪 小井斜角 姿态解算 测量误差

## Attitude extraction method of gyro inclinometer at small angles of inclination measurement

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**Abstract:**

According to the fact that the small angle of inclination measurement exists in low accuracy measurement of gyro inclinometer system. The paper analyzed the generation mechanism and formation cause in detail, and deduced a new extraction method which was suited to the small angles of inclination measurement of attitude. Built the MWD product prototype which based on dynamic and high precision of tuned gyro, and the use of high precision of three axis turntable repeatedly simulated the actual drilling logging process to drilling. Experimental results show that this method can effectively improves accuracy gyro inclinometer at small angles of inclination measurement.

**Keywords:** Gyro Inclinometer Small Angle of Deviation Attitude Calculation Measurement Error

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