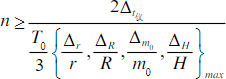
三线摆和扭摆实验-**数据记录表格**

班级 姓名 学号 座位号

1. 三线摆实验
2. 基础参数测量

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | 测量值 | | 不确定度Δ/mm | | 相对不确定度 | |
| 上盘半径r/mm | | （查表） | | 0.02 | |  | |
| 下盘半径R/mm | | （查表） | | 0.02 | |  | |
| 下盘质量m0/g | | （查表） | | 0.05 | |  | |
| 三圆孔圆心距R1/mm | | （查表） | | 0.02 | |  | |
| 上盘下沿Ha/mm | |  | | 0.02 | |  | |
| 下盘上沿Hb/mm | |  | | 0.02 | |  | |
| 垂直距离H=Ha-Hb/mm | |  | | ×0.02 | |  | |
| 大球直径D1/mm |  | |  | |  | | 均值： |
| 大球质量m1/g |  | | | | | | |
| 小球直径D2/mm |  | |  | |  | | 均值： |
| 小球质量m2/g |  | |  | |  | | 均值： |

1. 实验数据

估算应采用的周期数n0：首先随意选取周期数（如 10）,记录 10 个周期用时 10T0，从而估算出T0。按照以下公式进行计算

其中，Δt 仪=0.01s，T0 为以上估计值，且通常



代入数据计算得到n0≥某个数，取n0 为整数，进行后续测量。

测量空摆，n0= ，H0= ，m0= 。

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 次数 | 1 | 2 | 3 | 4 | 5 | 6 | 均值 | T0 |
| n0T0/s |  |  |  |  |  |  |  |  |

加大球，n0= ，H1= ，m1= ，m0+ m1= 。

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 次数 | 1 | 2 | 3 | 均值 | T0 |
| n0T1/s |  |  |  |  |  |

加三小球，n0= ，H2= ，m2= ， m0+ m2=

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 次数 | 1 | 2 | 3 | 均值 | T2 |
| n0T2/s |  |  |  |  |  |

1. 扭摆实验
2. 基础参数测量

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 次数 | 1 | 2 | | 3 | 4 | | 5 | 6 | | 均值 |
| 千分尺零位/mm |  |  | |  |  | |  |  | |  |
| 钢丝直径d/mm |  |  | |  |  | |  |  | |  |
| 实际直径d/mm | （均值测量-均值零位） | | | | | | | | | |
| 钢丝长度 L/mm |  | | | | | | | | | |
| 大环质量m 大 |  | | | | | | | | | |
| 小环质量m 小 |  | | | | | | | | | |
| 次数 | 1 | | 2 | | | 3 | | | 均值 | |
| 大环内径d 大内 |  | |  | | |  | | |  | |
| 大环外径d 大外 |  | |  | | |  | | |  | |
| 小环内径d 小内 |  | |  | | |  | | |  | |
| 小环外径d 小外 |  | |  | | |  | | |  | |

1. 实验数据

取周期 n=20，钢丝直径 d= ，钢丝长度 L= 。空摆

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 均值 | T0 |
| 20T0/s |  |  |  |  |  |  |  |  |

加小环

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 均值 | T1 |
| 20T1/s |  |  |  |  |  |

加大环

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 均值 | T2 |
| 20T2/s |  |  |  |  |  |