**阻尼振动与受迫振动实验数据记录**

班级 姓名 学号 实验座位号 实验日期

**请自行补全表格中物理量符号单位**

**一、0档阻尼下摆盘自由振动，一次启摆连续测50个幅度，再次启摆连续测6个10*Td***

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 幅度连续测量 | | | | | | | | | |
| 序号 | 幅度/° | 序号 | 幅度/° | 序号 | 幅度/° | 序号 | 幅度/° | 序号 | 幅度/° |
| 1 | 139 | 11 | 131 | 21 | 125 | 31 | 117 | 41 | 111 |
| 2 | 139 | 12 | 131 | 22 | 123 | 32 | 117 | 42 | 110 |
| 3 | 138 | 13 | 130 | 23 | 123 | 33 | 116 | 43 | 109 |
| 4 | 137 | 14 | 129 | 24 | 122 | 34 | 115 | 44 | 109 |
| 5 | 136 | 15 | 129 | 25 | 121 | 35 | 115 | 45 | 108 |
| 6 | 135 | 16 | 128 | 26 | 121 | 36 | 114 | 46 | 107 |
| 7 | 135 | 17 | 127 | 27 | 120 | 37 | 113 | 47 | 107 |
| 8 | 134 | 18 | 127 | 28 | 119 | 38 | 113 | 48 | 107 |
| 9 | 133 | 19 | 126 | 29 | 119 | 39 | 112 | 49 | 106 |
| 10 | 133 | 20 | 125 | 30 | 118 | 40 | 111 | 50 | 105 |
| 周期  测量/s | 序号 | 1 | 2 | 3 | 4 | 5 | 6 |  |  |
| 10*Td* | 14.974 | 14.986 | 14.999 | 15.009 | 15.019 | 15.029 |  |  |

**二、****阻尼档 2 的阻尼振动与受迫振动**

1、阻尼振动（幅度连续测量）

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 幅度/° | 116 | 107 | 99 | 91 | 83 | 77 | 71 | 65 | 61 | 56 |
| *Td*/s | 1.500 | 1.502 | 1.502 | 1.504 | 1.505 | 1.505 | 1.506 | 1.507 | 1.507 | 1.507 |



2、受迫振动

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 周期/s | 1.345 | 1. 458 | 1.473 | 1.480 | 1.483 | 1.485 | 1.486 | 1.490 | 1.493 | 1.496 |
| 幅度/° | 15 | 55 | 78 | 103 | 117 | 136 | 151 | 155 | 157 | 155 |
| 相差1/° | 168.0 | 157.5 | 148.5 | 138 | 131 | 118.5 | 106.5 | 99 | 89.5 | 80.5 |
| 相差2/° | 174.5 | 159.5 | 149.5 | 139 | 132 | 117.5 | 105.5 | 98 | 90.5 | 81.5 |
| 平均相差/° | 171.25 | 158.5 | 149 | 138.5 | 131.5 | 118 | 106 | 98.5 | 90 | 81 |
| 序号 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 周期/s | 1.499 | 1.507 | 1.514 | 1.522 | 1.532 | 1.549 | 1.556 | 1.572 | 1.604 | 1.649 |
| 幅度/° | 152 | 139 | 125 | 108 | 91 | 69 | 62 | 50 | 35 | 25 |
| 相差1/° | 74.5 | 61.5 | 51.5 | 43.5 | 36 | 26 | 22 | 19.5 | 12.5 | 11 |
| 相差2/° | 75 | 62.5 | 52.5 | 44.5 | 37 | 27 | 23 | 17.5 | 15.5 | 7 |
| 平均相差/° | 74.75 | 62 | 52 | 44 | 36.5 | 26.5 | 22.5 | 18.5 | 14 | 9 |



**三、阻尼档 4 的阻尼振动与受迫振动**

1、阻尼振动（幅度连续测量）

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 幅度/° | 117 | 102 | 89 | 77 | 66 | 57 | 50 | 44 | 38 | 32 |
| *Td*/s | 1.498 | 1.502 | 1.503 | 1.504 | 1.506 | 1.507 | 1.507 | 1.508 | 1.508 | 1.507 |



2、受迫振动

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 周期/s | 1.344 | 1.398 | 1.429 | 1.453 | 1.472 | 1.482 | 1.488 | 1.496 | 1.502 | 1.504 |
| 幅度/° | 15 | 23 | 32 | 46 | 60 | 72 | 80 | 88 | 91 | 91 |
| 相差1/° | 163 | 161.5 | 154.5 | 148 | 136.5 | 126.5 | 117 | 104 | 92 | 89.5 |
| 相差2/° | 169 | 157.5 | 158 | 150 | 138 | 127.5 | 118 | 105 | 93 | 90.5 |
| 平均相差/° | 166 | 159.5 | 156.25 | 149 | 137.25 | 127 | 117.5 | 104.5 | 92.5 | 90 |
| 序号 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 周期/s | 1.507 | 1.513 | 1.522 | 1.531 | 1.538 | 1.548 | 1.560 | 1.570 | 1.589 | 1.648 |
| 幅度/° | 91 | 89 | 83 | 74 | 68 | 61 | 52 | 46 | 38 | 24 |
| 相差1/° | 83.5 | 75 | 64 | 53.5 | 45.5 | 40.5 | 32 | 30 | 22.5 | 12 |
| 相差2/° | 84 | 76 | 65 | 54.5 | 47 | 38.5 | 34 | 28 | 24.5 | 16 |
| 平均相差/° | 83.75 | 75.5 | 64.5 | 54 | 46.25 | 39.5 | 33 | 29 | 23.5 | 14 |

