实验二. 牛顿环干涉

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| k | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 |
| x1/mm | 31.786 | 31.875 | 31.965 | 32.045 | 32.153 | 32.253 | 32.362 | 32.48 | 32.612 | 32.739 |
| x2/mm | 37.575 | 37.436 | 37.312 | 37.218 | 37.119 | 37.018 | 36.915 | 36.8 | 36.663 | 36.512 |
| D/mm | 5.789 | 5.561 | 5.347 | 5.173 | 4.966 | 4.765 | 4.553 | 4.32 | 4.051 | 3.773 |
| D2/mm | 33.51 | 30.92 | 28.59 | 26.76 | 24.66 | 22.71 | 20.73 | 18.66 | 16.41 | 14.24 |

1. 原始数据记录及处理

2. 数据处理（一元线性回归）

① 计算曲率半径

由可知与成线性关系。

令，，则，经计算可得：

10.5， 118.5， 23.719， 598.631， 266.284 。

2.08903， 1.78418，相关系数 0.999497

由，取589.3 nm，可得 886.234 mm

不确定度计算：

= 0.0234379， 0.00288675

0.023615

10.0183 nm

最终结果： (89 ± 1)e1 mm