|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Original Code** | **-O0** | **-O1** | **-O2** | **-O3** |
| **Runtime** | 202.585 secs | 160.178 secs | 158.584 secs | 170.227 secs |
| **Cache Misses** | 1,084,546,497 | 1,081,176,197 | 1,080,755,968 | 1,080,409,921 |
| **Cache References** | 22,648,383,722 | 3,263,648,280 | 3,261,181,143 | 3,260,194,574 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **With best compiler optimization level** | **Original** | **Column-major** | **Tiled 16x16** | **Tiled 32x32** |
| **Runtime** | 158.584 secs |  |  |  |
| **Cache Misses** | 1,080,755,968 |  |  |  |
| **Cache References** | 3,261,181,143 |  |  |  |