|  |  |  |  |
| --- | --- | --- | --- |
|  | GLM | Eigen | Cem |
| Vec3f | 10.24 | 10.03 | 10.14 |
| Vec4f | 17.46 | 11.09 | 11.03 |
| Mat3x3f | 24.58 | 24.10 | 24.28 |
| Mat4x4f | 42.54 | 42.42 | 42.44 |
| Mat3x3f \* Vec3f | 25.19 | 63.35 | 24.72 |
| Mat4x4f \* Vec4f | 38.43 | 76.62 | 38.23 |
|  | | | |
| Vec3d | 15.74 | 16.36 | 15.83 |
| Vec4d | 21.55 | 21.94 | 21.36 |
| Mat3x3d | 47.42 | 47.92 | 47.48 |
| Mat4x4d | 84.32 | 85.56 | 83.73 |
| Mat3x3d \* Vec3d | 48.99 | 55.47 | 48.59 |
| Mat4x4d \* Vec4d | 75.77 | 81.47 | 75.39 |

**Round 1:** Test on array of 10,000,000 elements:

Rating: Cem > Eigen > GLM.

**Round 2:** Test on Conjugate Gradient Solver: Fast: ~20 iters, Slow: ~70 iters, Sslow: ~5000 iters/1900 iters

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | GLM | Eigen | | Cem | Build-in |
| Fast, float | 1,614.54 | 5,883.16 | | 1,651.20 | 2,808.78 |
| Slow, float | 4,380.37 | 17,603.15 | | 4,440.36 | 7,491.92 |
| Super slow, float | 11,587.46 | 46,262.47 | | 11,249.04 | 30,924.41 |
|  | | |  | | |
| Fast, double | 2,907.31 | 5,203.45 | | 2,854.02 | 4,240.05 |
| Slow, double | 6,689.53 | 12,763.88 | | 6,757.77 | 9,667.27 |
| Super slow, double | 8,179.40 | 15,130.70 | | 8,233.00 | 11,556.10 |

Rating: GLM > Cem > Eigen