**Overall:**

* There were a TON of constants that weren’t constant – moved these to preprocessor definitions.
* Added comments where I understood what things were.
* Refactored and cleaned code spacing and variable assignments, etc.
* Changed data type to typdef so that, if need be, can easily change data types in the future.
* Added 3D memcpy initialization for pointers for optimum assignment.
* Added timing mechanism for benchmarking.

**Init\_Gaussian:**

* No more triple vectors (triple pointers, instead) – more efficient because we don’t need to push and pop a bagillion times. Lighter weight.
* Same idea for rho, ux, and uy – double pointers now.
* Simd vectorization for the inner for loop.
* Inner for loop doesn’t create needless temp variable – all is done in one calculation.
* Rho was being needlessly assigned to – eliminated this.

**Eq\_And\_Stream:**

* No more triple vectors (triple pointers, instead) – more efficient because we don’t need to push and pop a bagillion times. Lighter weight.
* Same idea for rho, ux, and uy – double pointers now.
* All variables that were not changed were passed in by const reference or as const.
* Again, many needless variables that were not used – eliminated them or moved to preprocessor definitions.
* Simplified ux and uy assignments to be more compact.
* Changed assignment of fEq to one equation, rather than creating and using multiple temps that were not necessary.
* Improved check for ftrue and force calculation (changed ftrue to C++ supported *bool* type).
* Added simd vectorization to the fOut assignment loop.