

#	Loop Body	ParGraphLLM-GPT-4 suggestion	Developer's version
1	<pre>for(int i = 0; i < 12; i++) { for(int j = 0; j < num_nucs[i]; j++) concs[i * max_num_nucs + j] = LCG_random_double(&seed); }</pre>	<i>NP</i>	<i>NP</i>
2	<pre>for(i = 0; i < in.lookups; i++){ for(int j = 0; j < 5; j++) { ... } verification += max_idx+1; }</pre>	<i>reduction(+:verification)</i>	<i>schedule(dynamic, 100) reduction(+:verification)</i>
3	<pre>for(int m = 0; m < num_mats; m++) { if(num_nucs[m] > *max_num_nucs) *max_num_nucs = num_nucs[m]; }</pre>	<i>NP</i>	<i>NP</i>
4	<pre>for(int j = 0; j < num_nucs[mat]; j++){ double xs_vector[5]; p_nuc = mats[mat*max_num_nucs + j]; conc = concs[mat*max_num_nucs + j]; ... }</pre>	<i>NP</i>	<i>NP</i>
5	<pre>for(int i = 0; i < 12; i++){ double running = 0; for(int j = i; j > 0; j--) running += dist[j]; if(roll < running) return i; }</pre>	<i>NP</i>	<i>NP</i>
6	<pre>for(i = 0; i < in.lookups; i++) { uint64_t seed = STARTING_SEED; ... SD.p_energy_samples[i] = p_energy; SD.mat_samples[i] = mat; }</pre>	<i>private(i)</i>	<i>schedule(dynamic, 100)</i>
7	<pre>for(i = offset; i < offset + num_samples_per_mat[m]; i++) { for(int j = 0; j < 5; j++) { if(macro_xs_vector[j] > max) { ... } } verification += max_idx+1; }</pre>	<i>reduction(+: verification)</i>	<i>schedule(dynamic, 100) reduction(+:verification)</i>
8	<pre>for(int l = 0; l < in.lookups; l++) { num_samples_per_mat[SD.mat_samples[l]]++; }</pre>	<i>NP</i>	<i>NP</i>
9	<pre>for(int m = 1; m < 12; m++) { offsets[m] = offsets[m-1] + num_samples_per_mat[m-1]; }</pre>	<i>NP</i>	<i>NP</i>
10	<pre>for(int m = 0; m < 12; m++) { quickSort_parallel_d_i(SD.p_energy_samples + offsets[m], SD.mat_samples + offsets[m], num_samples_per_mat[m], in.nthreads); }</pre>	<i>NP</i>	<i>NP</i>