Title: A GPU-Accelerated Fast Summation Method

Abstract: We present a fast summation method for particle interactions based on barycentric Lagrange interpolation and dual tree traversal (BLDTT). The method is kernel-independent, scales linearly in the number of particles, and runs on multiple GPUs. We demonstrate the performance of the BLDTT for a variety of particle systems and discuss its implementation into our boundary element TABI Poisson-Boltzmann solver. This is joint work with Leighton Wilson, Nathan Vaughn, and Weihua Geng.