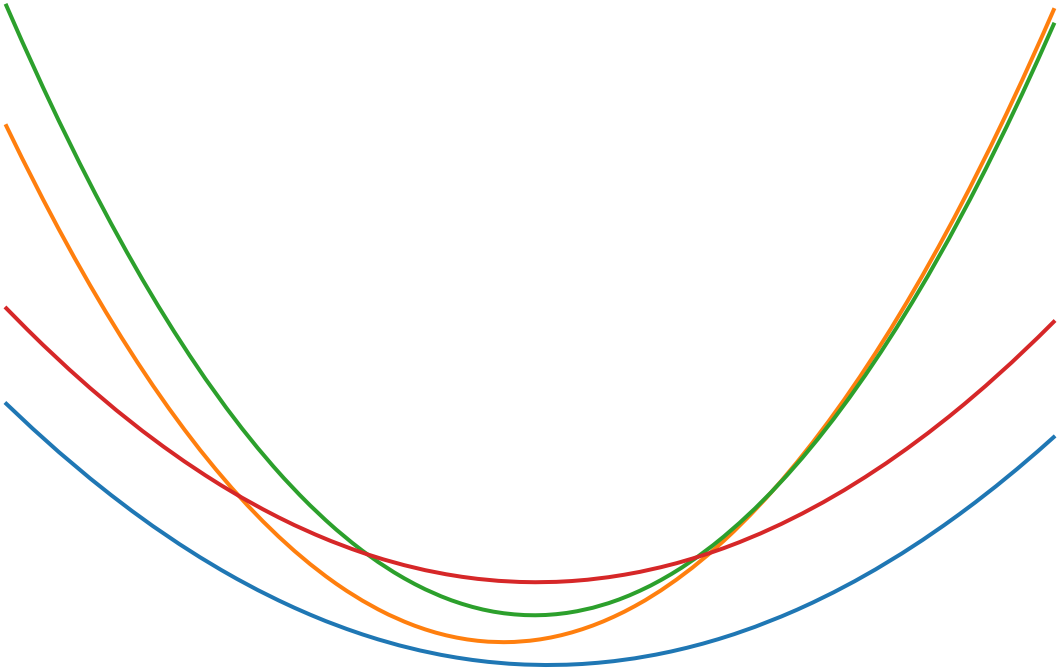quad_kernel