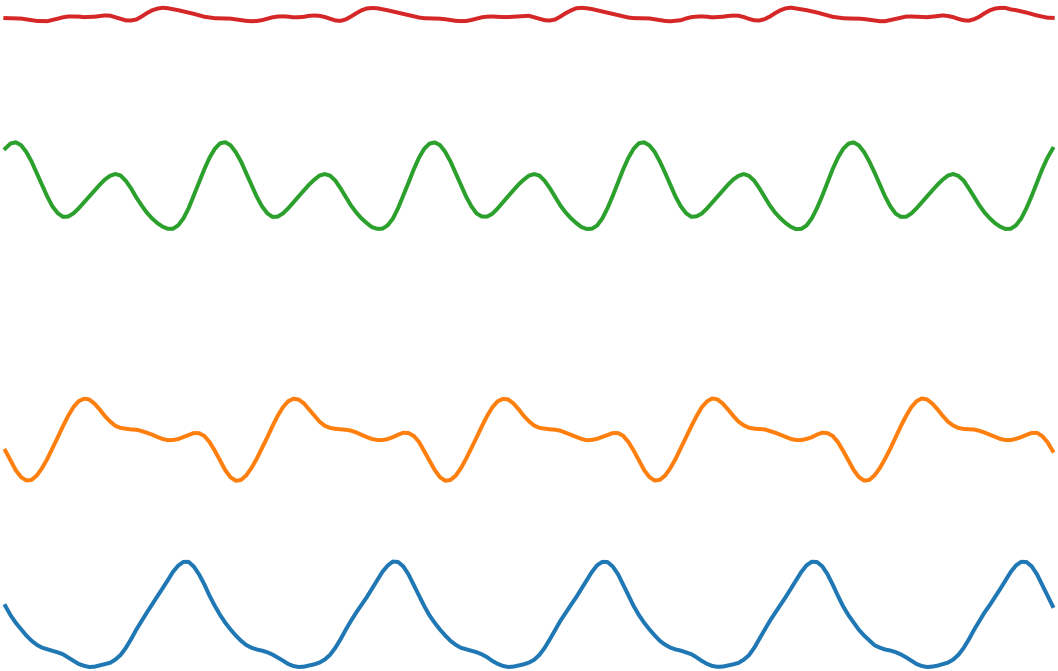per_kernel