Additional File 4: Critical surface for propagation failure

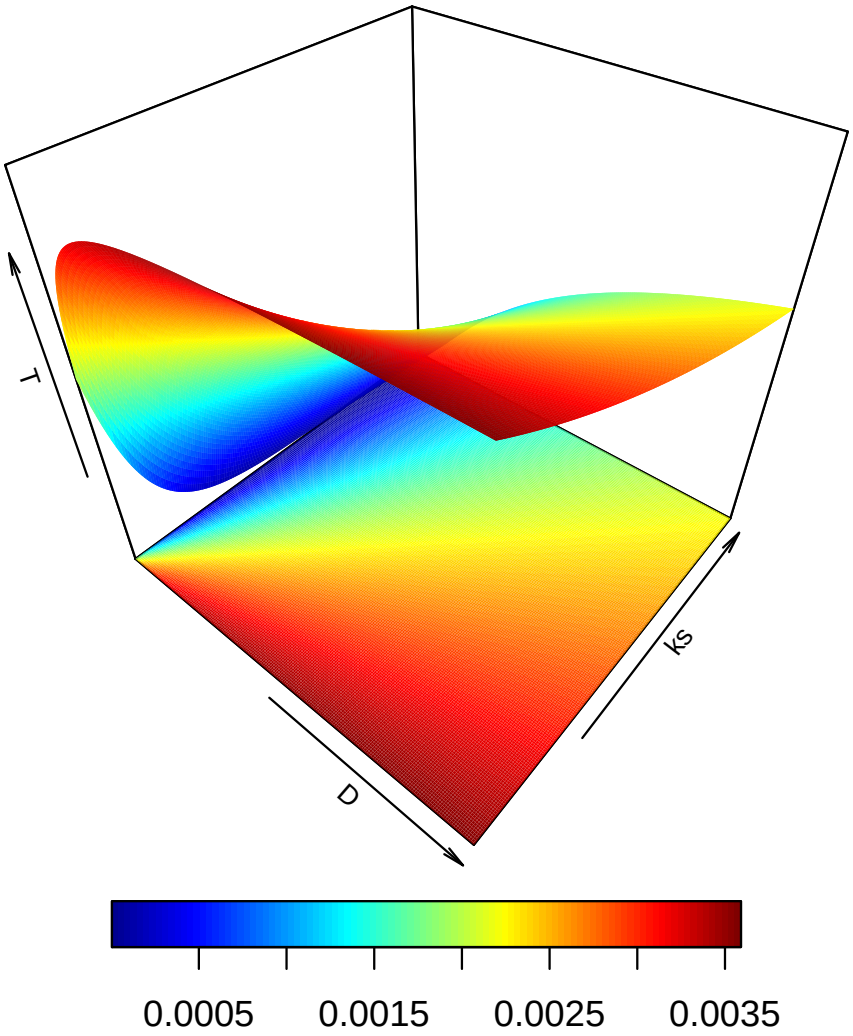

Figure 1: **Ca^{2+} diffusion may fail if D is small or/and k_s is large.** For any D or k_s, if the ratio of the threshold c_{th} to the firing strength σ, defined as T, is above the depicted surface, then a travelling wave will not propagate across the entire surface. Conversely if T is below the surface, a single release event is guaranteed to initiate a propagating wave. Small diffusion constants and large pumping rates lead to propagation failure. In the Figure, D varies between 1 and 40 μm^2/s, and k_s varies between 0.1 and 3 s^{-1}. The average distance between channels is 5.65 μm, corresponding to 24 approximately equidistant channels on a sphere of radius 8 μm.