

The Eikonal equation is a partial differential equation which restricts the magnitude of the gradient of some function. It is used in finite difference modellers to calculate the minimum distance to some surface, but it can be used in computational biology to estimate the speed of a wave-front through an anisotropic medium -- e.g. an electric wave in the heart. It is usually solved incrementally with a marching wave-front technique but can also be formulated as a partial differential equation with a suitable smoothing term.