Reconstructing discontinuities in multidimensional

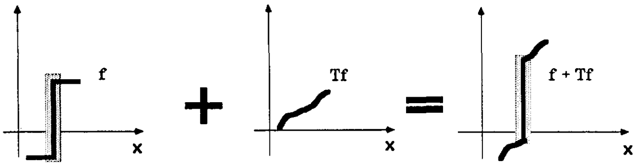
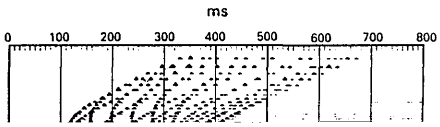


Fig. 1. Adding a smooth function changes neither the location nor the size of a jump discontinuity.

For a given point of reconstruction x and fixed source position η, we integrate the scattered field along the time–distance surface (curve in the 2-D case) $t = \phi^{\text{in}}(x,\eta) + \phi^{\text{out}}(x,\xi)$, which is dictated by the background index of refraction $n_0(x)$. It is clear that if there were a reflector at the point x, along this curve the scattered field is most affected. The weight function $b(x,\xi)$ in Eq. (3) is chosen so that we recover the jump of the function f at the point x as a result of such integration. The weight function $b(x,\xi)$ depends on


ms
0
100
200
300
400
500
600
700
800