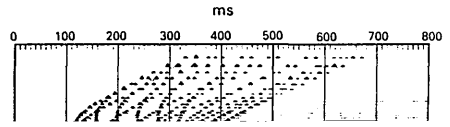


Fig. 1. Adding a smooth function changes neither the location nor the size of a jump discontinuity.

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



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