962-35-1259 **Frank Stenger*** (stenger@cs.utah.edu), School of Computin, University of Utah, Salt Lake City, UT 84112. *New Integral Equations for Inversion and Indefinite Convolution.* Preliminary report.

We present two novel integral equations for representing the solutions of the wave equation

$$\frac{1}{c^2(\bar{r})}\frac{\partial^2 u(\bar{r},t)}{\partial t^2} - \nabla^2 u(\bar{r},t) = 0, \qquad (\bar{r},t) \in V \times (0,T)\,, \tag{1}$$

as well as for the corresponding frequency domain Helmholtz equation. In (1), V is a subset of $\mathcal{R}^3$, while $c(\bar{r})$ denotes the speed of sound at a point $\bar{r}$ in $\mathcal{R}^3$. We illustrate the role of Sinc indefinite convolution for the solution and inversion of these equations. (Received October 03, 2000)