Meeting: 1003, Atlanta, Georgia, SS 4A, AMS-SIAM Special Session on Theoretical and Computational Aspects of Inverse Problems, I

1003-35-786 **Rakesh Rakesh*** (rakesh@math.udel.edu), Department of Mathematical Sciences, University of Delaware, Newark, DE 19716, and **David Finch**. *Trace theorems for the wave equation.*

Suppose u is the solution of the initial value problem

$$u_{tt} - \Delta_x u = 0, \qquad (x,t) \in R^n \times [0,\infty);$$

$$u(x, t{=}0) = f(x), \qquad u_t(x, t{=}0) = g(x), \qquad x \in R^n.$$

Suppose $n \geq 1$ is odd, f and g are supported in a ball B with boundary S, and one of f or g is zero. We derive identities relating the norm of f or g to the norm of the trace of u on $S \times [0,\infty)$. These identities are derived using integral geometric and multiplier methods. (Received September 29, 2004)