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Jesus R Oliver* (jroliver@math.ucsd.edu), San Diego, CA 92092. *A Vector Field Method for Non-Trapping Radiating Space-Times.*

In this work we study the global pointwise decay properties of solutions to the inhomogeneous linear wave equation $\square_g \phi = F(t, x)$ on time-dependent, non-trapping, radiating space-times. Assuming a local energy decay estimate we prove that sufficiently regular solutions to this equation satisfy a conformal energy estimate and higher order conformal energy estimate with vector fields. As an application we also establish a global pointwise decay estimate of the form $|\phi(t, x)| \lesssim \frac{1}{\langle t+r \rangle \langle u \rangle^{\frac{1}{2}}}$ for sufficiently regular solutions to the linear wave equation. (Received September 17, 2013)