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Carlos Almada* (almada_carlos@colstate.edu), 4225 University Ave., Department of Mathematics, Columbus State University, Columbus, GA 31907. *Decay Rates for the Shifted Wave Equation on a Symmetric Space of Noncompact type.*

In this work we derive $L^\infty - L^1$ decay rate estimates for solutions of the shifted wave equation on certain symmetric spaces (M, g) . Helgason study the Cauchy problem for the wave operator $\mathcal{L} = \partial^2/\partial t^2 - \Delta - c^2$ on these spaces and obtained a closed form for the solution. We extend to this new context the classical estimates for the wave equation in \mathbb{R}^n . Then, following some ideas of Klainerman, we introduce a new norm based on Lie derivatives with respect to Killing fields on M and derive an estimate for the case when $n = \dim M$ is odd. (Received January 12, 2011)