999-35-166 **Carlos J Almada*** (`almada_carlos@colstate.edu`), Department of Mathematics, Columbus State University, 4225 University Ave, Columbus, GA 31907. *Global Weak Hyperbolic Harmonic Maps into Euclidean Spheres.*

A map $\varphi : (M^{3+1}, g) \longrightarrow (S^{p-1}, e)$ is a hyperbolic harmonic map if it satisfies the equations

$$\Box \varphi = (ge)(\nabla\varphi, \nabla\varphi)\varphi$$
$$|\varphi| = 1$$

In this work we construct a global weak solution of this system in the case that the source manifold (M^{3+1}, g) is a regularly hyperbolic manifold and the target manifold $N = S^{p-1}$ is the Euclidean sphere in $I\!\!R^p$. This work extends a result of J. Shatah in Minkowski space to the case of regularly hyperbolic manifolds (M^{3+1}, g). (Received August 21, 2004)