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# The Hyperboloidal Foliation Method for Nonlinear Wave-Klein-Gordon Systems

Philippe G. Lefloch<sup>\*†</sup>

<sup>1</sup>Laboratoire J-L Lions and CNRS (UPMC) – Université Pierre et Marie Curie (UPMC) - Paris VI – 4 place Jussieu - 75005 Paris, France

## Abstract

I will present a new method, based on a (3+1)-foliation of (the interior of a light cone in) Minkowski spacetime by hyperboloids and developed in collaboration with Yue Ma (UPMC) in *The hyperboloidal foliation method, World Scientific Press, 2014*. This method allows us to establish global-in-time existence results for small-amplitude solutions to nonlinear wave-Klein-Gordon systems posed on a curved spacetime. We use energy functionals that are invariant under Lorentz transformations, and are able to include wave equations and Klein-Gordon equations within a unified framework. The method provides energy bounds with almost optimal growth rates, while a natural application of this technique stands out: the nonlinear stability of Minkowski space for massive scalar fields.

Blog address: <http://philippelefloch.org>

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\*Speaker

†Corresponding author: [contact@philippelefloch.org](mailto:contact@philippelefloch.org)