

Djiby Fall (djiby.fall@[nosspam]jsums.edu), Department of Mathematics, Jackson State University, Jackson, MS 39217, *Global Attractors for the Wave Equation in Unbounded Domains*.¹

Abstract. We discuss the longtime dynamics of the damped nonlinear wave equation in unbounded domains. It is of interest to show the existence of global attractors for such systems. To this end, one generally needs some type of asymptotic compactness. When the evolutionary PDE is defined on a bounded domain Ω , asymptotic compactness follows from the regularity estimates and the compactness of the Sobolev embeddings. Therefore, the existence of attractors has been established for most of the dissipative equations of mathematical physics in a bounded domain. When Ω is unbounded, the Sobolev embeddings are no longer compact, so the usual regularity estimates may not be sufficient. We review some developments in this area and we discuss some other interesting research problems.

Biographical Sketch. Djiby Fall was born in Senegal where he received his B.S. and M.S. in Mathematics at the University Gaston Berger of Saint-Louis. He participated in the 2000-2001 Mathematics Diploma Programme at the Abdus Salam ICTP in Trieste, Italy. In 2005, he completed his Ph.D. in Mathematics at the University of South Florida in Tampa under the direction of Yuncheng You. He is an assistant professor in the Department of Mathematics at Jackson State University in Jackson MS.

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