# On the supercritical defocusing wave equation outside a ball

**Piero D'Ancona**

Sapienza University of Rome

### Abstract

In this work I consider a defocusing semilinear wave equation, with a power nonlinearity, defined on the outside of the unit ball of Rn, and with Dirichlet conditions at the boundary. The power is assumed to be sufficiently large, p > O(n), and the space dimension is 3 or larger. Even in the radial case, the corresponding problem on Rn is completely open. Here I construct a family of large global solutions, whose data are small perturbations of radial initial data in suitable weighted Sobolev norms of higher order.