Title: Wave equations on bounded domains

Aim: The aim of this short course is to introduce the students to the study of solutions to the semilinear wave equation on a bounded domain $\Omega \subset \mathbb{R}^n$,

$$\partial_t u - \Delta u + f(u) + k(x)g(\partial_t u) = h(t, x), \quad u(t, \cdot)|_{\partial\Omega} = 0$$

where $f(u)$ represents a nonlinear restoring force, $k(x)g(\partial_t u)$ a damping force and $h(t, x)$ an exterior force. The classical approach to the well-posedness of solutions (existence, uniqueness and regularity) and their long-time behavior will be considered.

Based on the monograph [1] and references therein.

Duration: 6 hours divided into 3 lectures.

Bibliography: