

Energy estimates for Klein-Gordon type equations with time dependent mass

FUMIHIKO HIROSAWA

Yamaguchi University, Faculty of Science, 753-8512 Yamaguchi, JAPAN

hirosawa@yamaguchi-u.ac.jp

We consider the energy estimate of the solution to the Cauchy problem of Klein-Gordon type equation with time dependent mass:

$$\begin{cases} \partial_t^2 u - \Delta u + M(t)u = 0, & (t, x) \in (0, \infty) \times \mathbb{R}^n, \\ u(0, x) = u_0(x), \quad \partial_t u(0, x) = u_1(x), & x \in \mathbb{R}^n, \end{cases}$$

where $M(t)$ is real valued, oscillating and not necessarily positive. The main purpose of my talk is to give sufficient conditions to $M(t)$ for the energy to be asymptotically stable.