SEMINÁRIO DE EQUAÇÕES DIFERENCIAIS

Energy estimates for the Cauchy problem of Klein-Gordon type equation with non-effective and very fast oscillating time-dependent potential

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Resumo: The aim of this talk is to prove some energy estimates for Klein-Gordon equation with time dependent potential. If the potential is "non-effective" and "very slow oscillations", (according to the classification of Reissig and Yagdjian) then the energy estimates are proved by Ebert at al. In contrast, the main goal of the present paper is to generalize the previous result for the potential with "very fast oscillations", consequently, the positivity of the potential is not required.

Basically we perform a change of variable transforming the Klein-Gordon time-dependent problem into a damped wave time-depending problem and apply the technique presented by Hirosawa and Wirth.