

*HW assignment 3.* Due March 3 at the lecture

For the theory of complex KG field

1. Find the differential and total cross section of elastic scattering of + and - particles (in the c.m. frame) in the leading order in perturbation theory.
2. Find the matrix element of M-matrix

$$\mathcal{M}(p_{1+}, p'_1 - \rightarrow p_{2+}, p'_2 -)$$

in the  $\lambda^2$  order in perturbation theory. (Do not calculate integrals over loop momentum, leave them as they stand).