Université Paris-Saclay
IJCLab
(Laboratoire de Physique des 2 Infinis Irène Joliot-Curie)
Bât. 100, F-91405 Orsay

Séminaire de Physique Nucléaire Théorique

Wave functions and EM form factors via Bethe-Salpeter-Nakanishi approach

V. A. Karmanov
(Lebedev Physical Institute, Moscow, Russia)

New results on calculation of the Bethe-Salpeter (BS) amplitude in the Minkowski space, proceeding from the Euclidean BS amplitude, will be pre- sented. The instability of the continuation Euclidean -¿ Minkowski ampli- tude is strongly suppressed (though, not completely) by using the Nakanishi integral representation and Tikhonov regularization. The residual uncer- tainty almost does not make any influence on the observables (electromagnetic form factors). For the analytically known interaction kernel we derive an integral equa- tion for the Nakanishi function. The latter is found when, in addition to ladder, the cross graphs are incorporated. Then, with this solution, the elec- tromagnetic form factors are calculated beyond the impulse approximation, taking into account also the cross graphs in the electromagnetic vertex. The three-body BS equation with the contact interaction is solved for the first time. We compare the BS results with ones found previously in the framework of the light front dynamics.

Mercredi 29 Novembre 2017
11 :30
IJCLab, Bât. 100, Salle Bâtiment 100, Salle A015