



SECTION DE PHYSIQUE

COLLOQUE DE PHYSIQUE

24, QUAI ERNEST-ANSERMET, CH-1211 GENÈVE 4

Lundi 11 février 2019, 12h30

Ecole de Physique, Grand Auditoire

«A Fresh Look at the Calculation of Tunneling Action»

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Abstract:

The calculation of tunneling actions, that control the exponential suppression of the decay of metastable phases (like the unstable electroweak vacuum), can be reformulated as an elementary variational problem in field space. This alternative approach circumvents the use of bounces in Euclidean space by introducing an auxiliary function, a tunneling potential V_t that connects smoothly the metastable and stable phases of the field potential V . The tunneling action is obtained as the integral in field space of an action density that is a simple function of V_t and V and can be considered as a generalization of the thinwall action to arbitrary potentials. This formalism provides new handles for the theoretical understanding of different features of vacuum decay, can be easily extended to include gravitational effects in an elegant way and has a number of useful applications that I will discuss.

Une collation en compagnie du conférencier sera offerte après le colloque.

Prof. Dmitry Abanin

Genève, le 4 février 2019/nc

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