Institute of Atomic Physics, Institute of Physics and Nuclear Engineering, Theoretical Physics, apoma Laboratory

SEMINAR

Extensive Light Investigations, Seminar Series, II

Electromagnetic-Radiation Effect on alpha Decay

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When it comes to connecting the Nuclear Physics to Laser Physics, everybody looks for alpha decay in strong radiation field. Similarly, everybody computes the decay by tunneling, without noticing that the strong field impedes and precludes in fact the tunneling. Moreover, the tunneling rate in low fields is as much overlooked as all the calculations are improper.

This is a more technical Seminar.

High decay rate in strong electric fields has been presented in a previous Seminar in this series (I); it has nothing to do with the tunneling. Here, the rate of the alpha decay is computed in low electric fields, both static and oscillating. It is shown that the low fields bring only second-order corrections to the decay rate, with a slight anisotropy. The results might be relevant, especially since the fields felt by the atomic nuclei are seldom strong.

Thursday, February 1st , 2018, 12am,
Seminar Room, Department of Theoretical Physics