

ΣΕΜΙΝΑΡΙΟ ΚΕΝΤΡΟΥ ΚΒΑΝΤΙΚΗΣ ΠΟΛΥΠΛΟΚΟΤΗΤΑΣ &
ΝΑΝΟΤΕΧΝΟΛΟΓΙΑΣ/ CCQCN SEMINAR

Tuesday, 19 April 2016

11:00-12:00

3rd Floor Seminar Room

**Cherenkov radiation by nonlinear vortices travelling in the long
Josephson sandwich**

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Abstract

It is shown that Josephson vortices travelling in sandwich embedded in dielectric media radiate electromagnetic waves with THz frequencies.

This phenomenon is caused by the Cherenkov Effect and takes place if vortex velocity exceeds the speed of light in dielectric. The widths of Cherenkov radiation spectrum lines of Josephson vortex trains in long sandwiches are found. Conditions are determined such that the line widths owing to a finite train length are comparable to or less than the line widths owing to thermal fluctuations.

