



**ΚΟΙΝΟ ΣΕΜΙΝΑΡΙΟ ΚΕΝΤΡΟΥ ΚΒΑΝΤΙΚΗΣ ΠΟΛΥΠΛΟΚΟΤΗΤΑΣ ΚΑΙ
ΝΑΝΟΤΕΧΝΟΛΟΓΙΑΣ & ΚΕΝΤΡΟΥ ΘΕΩΡΗΤΙΚΗΣ ΦΥΣΙΚΗΣ ΚΡΗΤΗΣ /**

JOINT CCQCN -CCTP SEMINAR

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14:15-15:15

2nd Floor Seminar Room

The out of equilibrium birth of a holographic superfluid

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Abstract

We study the time evolution of a holographic superconductor after a linear thermal quench from a disordered to an ordered phase. We identify the time scale for which the condensate starts to form. For later times, and sufficiently slow quenches, the scaling of the number of vortices with the quench speed follows the Kibble-Zurek prediction. We put forward a theoretical prediction for the total number of vortices that improves substantially the Kibble-Zurek result. We also identify the maximum quench speed for which KZ scaling is valid and propose a theoretical prediction for the number of vortices for faster quenches. Finally we identify a time scale for which a pseudogap phase is observed, namely, the condensate is formed but there is no phase coherence.

