

ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ
ΤΟΜΕΑΣ ΦΥΣΙΚΗΣ ΣΤΕΡΕΑΣ
ΚΑΤΑΣΤΑΣΗΣ
ΠΑΝΕΠΙΣΤΗΜΙΟΥΠΟΛΗ, 157 84
ΑΘΗΝΑ

ΕΘΝΙΚΟ ΜΕΤΣΟΒΙΟ ΠΟΛΥΤΕΧΝΕΙΟ
ΤΟΜΕΑΣ ΦΥΣΙΚΗΣ, ΣΧΟΛΗ
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ΚΑΙ ΦΥΣΙΚΩΝ ΕΠΙΣΤΗΜΩΝ
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ΑΘΗΝΑ

ΣΕΜΙΝΑΡΙΟ
ΦΥΣΙΚΗΣ ΣΥΜΠΥΚΝΩΜΕΝΗΣ ΥΛΗΣ

Δευτέρα 23-3-2015 12:00 μ.μ.

Αίθουσα 027, Ισόγειο Κτηρίου Φυσικής, Πολυτεχνειούπολη Ζωγράφου

«Synthetic photonic media with gain and loss»

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The theme of this talk is related to propagation of optical waves in non-hermitian systems. Such composite structures that combine gain and loss have novel functionalities-applications in lasers and integrated photonics. After a brief review of the recent advances in the area of parity-time (*PT*)-symmetric optics [1,2,3], we are going to focus on two new concepts: singular amplification in lossy amplifiers [4], and constant-intensity waves [5] in non-hermitian waveguides and cavities.

References

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- [4] K. G. Makris, L. Ge, and H. Türeci, Anomalous transient amplification of waves in non-normal photonic media *Phys. Rev. X*, 4 (2014), 041044.
- [5] K. G. Makris, Z. H. Musslimani, D. N. Christodoulides, and S. Rotter, Constant-intensity waves and their modulation instability in non-hermitian potentials *accepted for publication in Nature Communications*, (2015).

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