CRETE CENTER FOR
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ΣΕΜΙΝΑΡΙΟ ΚΕΝΤΡΟΥ ΚΒΑΝΤΙΚΗΣ ΠΟΛΥΠΛΟΚΟΤΗΤΑΣ & ΝΑΝΟΤΕΧΝΟΛΟΓΙΑΣ/
CCQCN SEMINAR

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11:00-12:00

3rd Floor Seminar Room

Chaos in External-Cavity Semiconductor Lasers

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Abstract

External-cavity semiconductor lasers (ECSL) provide an archetypical example of a nonlinear system with time-delayed feedback, and as such exhibits high-dimensional chaos with ultrafast dynamics. In this talk I review our recent work on ECSLs beginning with fundamental experimental studies of the rich dynamics that can be accessed by varying the operating and design parameters of the system. Specifically, I present our recent work showing for the first time bifurcation diagrams of ECSLs as the strength of the feedback is varied. I then discuss applications of interest to our group, including chaos communications and ultrahigh-rate random bit generation.

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