SAPIENZA
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SAPIENZA OPTICA
STUDENT CHAPTER

OPTICA

OPTICA PHOTONICS WITHOUT BORDERS SEMINARS

When Light Breaks Symmetry: "Exceptional" Effects in Kerr Resonators

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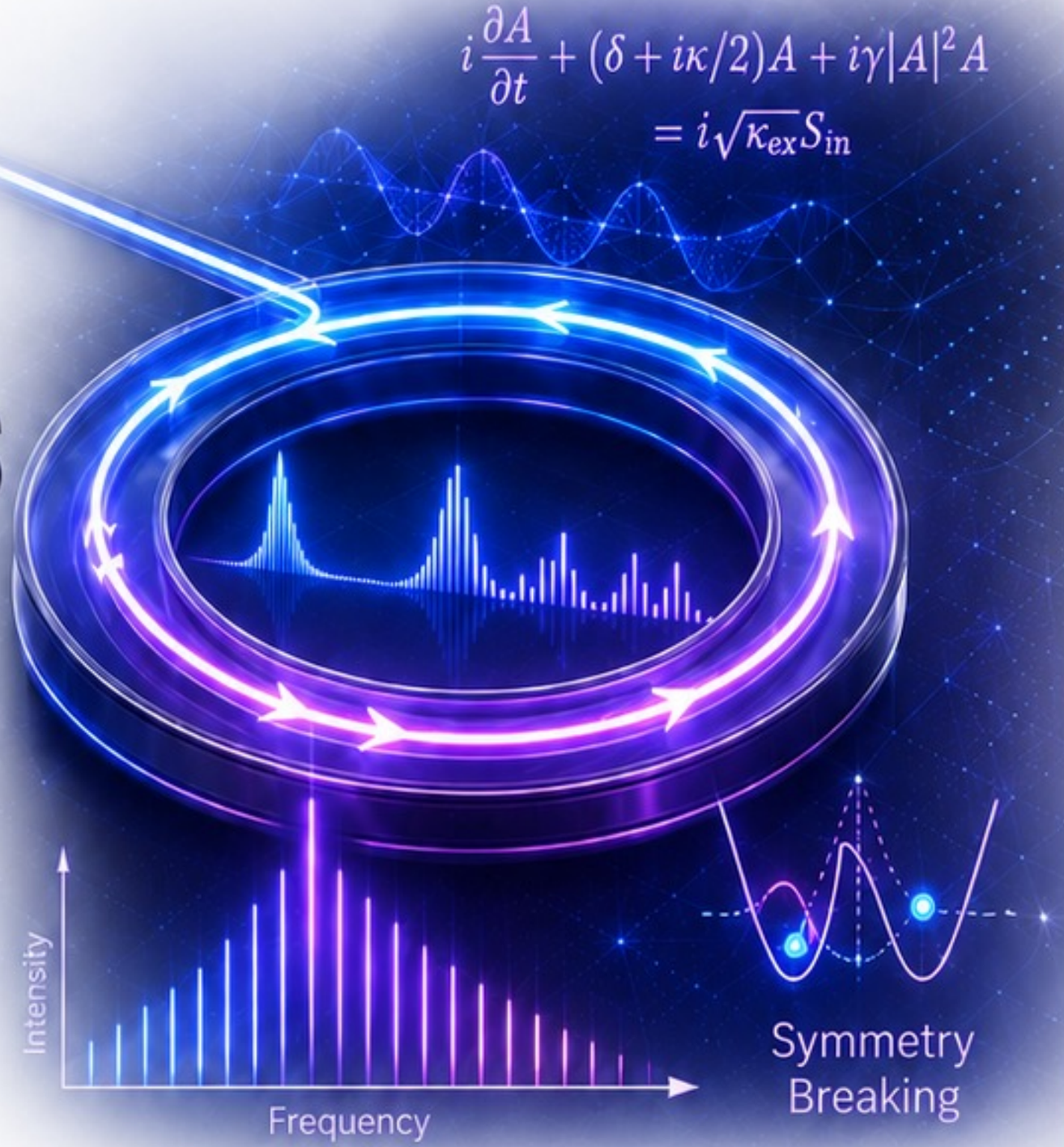

ABSTRACT

Spontaneous symmetry breaking describes the transition of a symmetric system into an asymmetric state triggered by a tiny perturbation. This seminar explores this phenomenon in optical Kerr resonators, nonlinear photonic devices used in frequency comb generation, gyroscopes, polarization control, random number generation, and all-optical computing.

The talk will introduce symmetry breaking between circulating light fields, the formation of Temporal Cavity Solitons, and their role in optical frequency comb generation. Recent developments in coupled resonator systems, collective soliton dynamics, and faticon solitons will also be discussed.

BIO

Dr Lewis Hill is a Senior Scientist at the Max Planck Institute for the Science of Light in Erlangen, Germany. He earned his PhD in Physics from the University of Strathclyde in 2021. His research focuses on photonic effects in Kerr resonators, nonlinear optics, and related light–matter dynamics. He is also actively involved in the development of students and early-career researchers within the photonics community.

FRIDAY 26 JUNE 2026 | **3:00 PM (CEST)** | **ONLINE SEMINAR**

SCAN FOR REGISTRATION

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