

## Photonic limiter based on exceptional point spectral degeneracies

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We propose a new type of photonic reflective limiter which respects a pseudo-Parity-Time (PT) symmetry. The system consists of two optically similar cavities with differential loss and it is prepared in a way that at low incident light powers demonstrates an exceptional point (EP) spectral degeneracy which supports a high resonant transmission. For high powers of the incident light, a non-linear (Hermitian) mechanism is activated, leading to a detuning of one of the cavities and a subsequent lift of the spectral degeneracy. The resulting resonant modes have either low Q-factor or are unstable due to the non-linearity. Consequently, the resonant transmission is dramatically suppressed while the reflectivity reaches values of order unity. We capitalize on this sudden (self-induced) drop of transmittance in order to propose these PCs as a new architecture for reflective limiters and switches.

**Disclaimer:** The whole Trento academic community is invited to participate. However, since this space is dedicated to PhD students, we would like to maintain an informal and welcoming environment

**General information:**

The seminar will be held at ECT\*, Villa Tambosi, Strada delle Tabarelle 286, Villazzano. We are going to have a coffee break!  
To reach Villa Tambosi: take bus number 13 from Povo (one leaves around 11) or bus number 6 from the city center. The bus stops is in front of the Villa. In order to organize the coffee break we kindly ask you to confirm your presence through the google form that you can find scanning the following QR code:



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