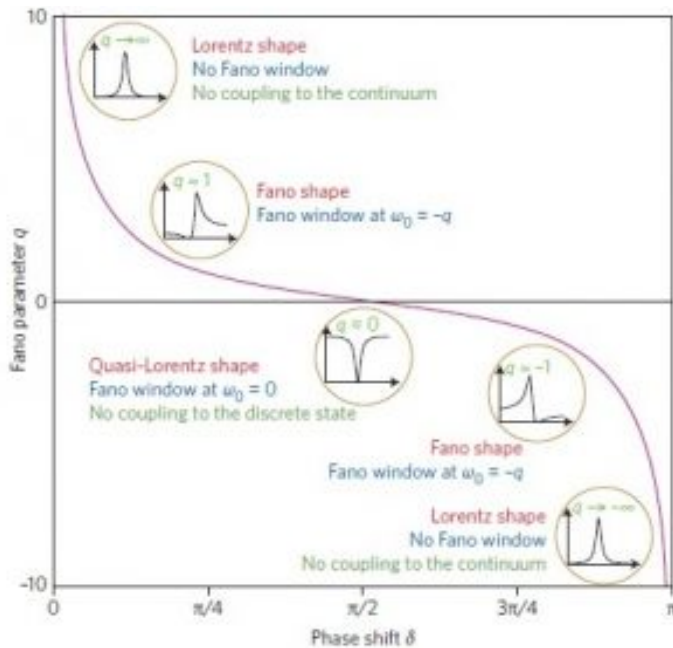


# Fano resonances in photonics



Rapid progress in photonics and nanotechnology brings many examples of resonant optical phenomena associated with the physics of Fano resonances, with applications in optical switching and sensing. For successful design of photonic devices, it is important to gain deep insight into different resonant phenomena and understand their connection. Here, they review a broad range of resonant electromagnetic effects by using two effective coupled oscillators, including the Fano resonance, electromagnetically induced transparency, Kerker and Borrmann effects, and parity-time symmetry breaking. they discuss how to introduce the Fano parameter for describing a transition between two seemingly different spectroscopic signatures associated with asymmetric Fano and symmetric Lorentzian shapes. they also review the recent results on Fano resonances in dielectric nanostructures and metasurfaces.

**Source :**

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**Related paper:** Mikhail F. Limonov et al., Fano resonances in

photonics, *Nature Photonics.*, 11,(2017).