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Review text:

The paper reviews the appealing physics which is hidden behind the Kato's concept of the exceptional points (EP) and which became "a physical reality" in the light of recent non-quantum experiments. In the introduction one appreciates the amazing variability of the areas of physics where EP's proved to play a role. On the more mathematical side I miss a remark on the truly seminal older work by C. Bender and T. T. Wu (e.g., Phys. Rev. 184 (1969) 1231) who made the EP's exceptionally popular via their occurrence in the quantum harmonic oscillator H with the quartic perturbation gV at the complex couplings g.

The author emphasizes an ease of a removal of the Hermiticity assumption from the matrices H and/or V in the EP context of classical physics. Of course, one could complement his argument by the older works on the cubic imaginary V in quantum context (cf., e.g., the review by G. Alvarez in J. Phys. A: Math. Gen. 27 (1995) 4589 giving a few other references). Reference [23] which presented a breakthrough in this direction would deserve a completion by a sample of the subsequent intensive activity in the field of quantum theory with non-self-adjoint observables. At random I just recollect the Mostafazadeh's detailed mathematical outlines of the EP-related mathematics (also known as a Jordan-block matrix structure deserving, in principle, a further detour to the classical works by M. G. Krein etc). I would even dare to add also my own - and probably the first exactly solvable - explicit EP differential Schroedinger equation example [cf. M. Z., Phys. Lett. A 259 (1999) 220].

The most appealing parts of the present review lie in the simplicity and transparency of the detailed description of the two classical coupled and damped pendula in section 2, a generic two-dimensional matrix picture and classifica-

tion of the EP states in section 3 as well as the phenomenologically oriented insightful completion of the description of the repelling-level phenomena in section 4.