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y-induced chaotic Whispering Gallery modes ARACELI GONGORA-TREVINO, UNAM, Mexico and Northeastern USA, STU-ART SCHAFFNER, Northeastern University, JORGE JOSE, SUNY at Buffalo — A free particle inside a circular billiard bouncing elastically from the boundary produces classically bounded caustic orbits and Whispering Gallery (WG) modes in the quantum case. If a sector is taken out from the circle, forming a Pacman-like billiard, the classical caustic orbits remain. However, in the quantum case the WG modes have fractional quantum angular momentum described by Bessel functions of fractional order. In this work we have considered the case when the straight walls of the Pacman are not fixed in time but oscillate periodically or non-periodically. The structure of the WG modes changes; there are cases where the WG mode intensity increases significantly in certain spatial locations when compared with the situation in the Pacman stationary case. This intensity increase is analyzed in detail, and it may be implemented and tested in the type of micro-cavity used in quantum dot lasers.

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