Erratum: Quantum-Dot Ground-State Energies and Spin Polarizations: Soft versus Hard Chaos [Phys. Rev. Lett. 90, 176801 (2003)]

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The ground-state energies of the model quantum dots under study were determined by the minimization over the different possible orbital occupations of a Hartree-Fock-like expression. In this minimization, orbital occupations such as the one shown in Fig. 1(a), where an orbital below the Fermi energy was singly occupied, were naturally taken into account. However, orbital occupations such as the one shown in Fig. 1(b), where an orbital below the Fermi energy is completely empty, were assumed to be irrelevant for the determination of the ground state.

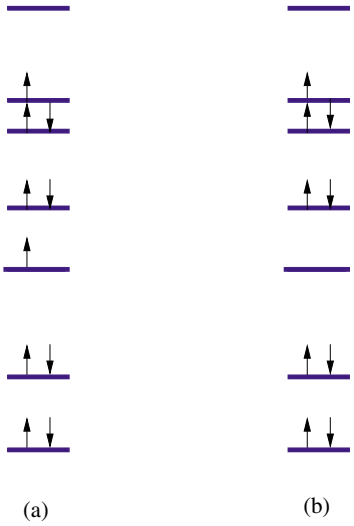

FIG. 1 (color online). Examples of orbital occupations.

It turns out that these configurations actually represent a statistically significant proportion of the ground states, especially as the dynamics of the system becomes less chaotic; the explanation for this will be discussed in a forthcoming publication. As a consequence, Fig. 2 and Table II of the Letter should be replaced by the final figure and table below, respectively. The modification of the spin occupations is not statistically significant, except possibly in

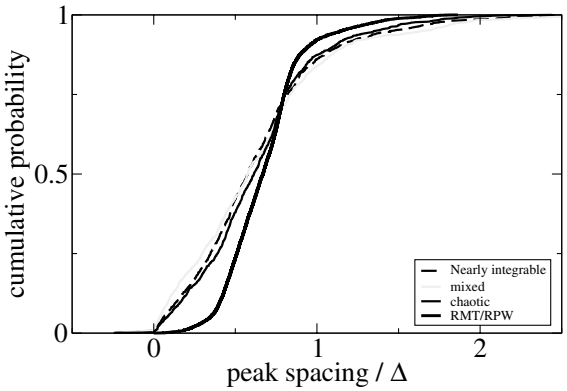

FIG. 2. Integrated peak spacing distribution with $\zeta = 0.8$ for RMT/RPW (thick black line), mostly chaotic (black line), mixed (grey line), and nearly integrable (dashed line) regimes.

the near-integrable case. Thus, conclusions concerning the spins of the nonchaotic dots remain essentially unaffected. The peak spacing distributions, however, do show some qualitative differences. The distributions are narrower, and the different dynamical regimes much more similar. They remain, nevertheless, significantly different from the prediction of the random plane wave model that should apply to the hard chaos limit.

TABLE II. Probabilities $P(s = 2)$, $P(s = 5/2)$ to find a spin two (even N) or five halves (odd N) ground state, and average value $\langle \delta s \rangle$ of the ground-state spin augmentation [$\delta s = s$ or $(s - 1/2)$ for an even or odd number of particles, respectively], for the various dynamical regimes (values of λ) with $\kappa = 1.0$ and $\zeta = 0.8$. The last column is the RMT/RPW prediction.

λ	$+0.20$	-0.20	-0.80	RMT/RPW
$P(s = 2)$	0.09	0.16	0.08	0.01
$P(s = 5/2)$	0.02	0.07	0.01	0.00
$\langle \delta s \rangle$	0.49	0.59	0.42	0.23