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Erratum

Erratum to:
Electrons in a cryogenic planar Penning trap and experimental challenges for quantum processing

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The energy dissipated in HEMT preamplifier is permanently coupled to the the trapped electrons and causes an axial temperature of about 5K. In the experiment [1] (cited as [13] in original article) electronic feedback allows cooling from 5.2 K down to 0.85 K.

The trapping potential anharmonicity is a feature for the planar traps, though could be very useful feature for 3D cylindrical Penning traps [1,2] ([13,18] in original article). In experiments [3,4] the fourth-order nonlinearity established parametric excitations of the electron cloud near its axial resonance frequency, while the power of the parametric pump exceeds threshold value electrons synchronize their motion and were used for the probing of modes structure of the trap cavity. A further development of this technique [5] used a single electron parametric oscillator as one-bit memory to measure cyclotron excitation thus allowing to perform all measurements "in the dark" insofar all axial drives and preamplifier are turned off to avoid significant increase of the axial temperature.

We apologize that not all necessary articles were cited in our article.

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