Offset Compensated QUIC Trap

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The quadruple Ioffe configuration (QUIC) trap was first demonstrated in 1998 by Hänsch group [1]. The QUIC trap is a simplified version of the Ioffe-Pritchard (IP) trap[2] and it also provides a magnetic trapping potential with a non-zero magnetic field minimum.The extremely simple coil configuration, greatly reduces the power dissipation and it also improves the magnetic field stability due to the use of a single power supply for all coils. These properties make the Quadruple-Ioffe configuration a very attractive magnetic trap for ultracold atoms and BEC experiments[3]. We purpose a offset compensated QUIC trap, a new of quadruple ioffe configuration, in which of trap displacement is tunable and reduced to minimum from the quadruple trap. We use a compensation coil in our Offset compensated QUIC trap to compensate for the displacement of quadruple zero from the center towards the Ioffe coil in the case of a normal QUIC trap. We also investigate the results of Magnetci feild simulations of our new trap and analysis of our new magnetic trap.

Keywords:

Quadruple Ioffe Configuration,Ultracold Atoms,BEC, Offset Compensated QUIC trap.

References

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