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Detecting yocto(10^{-24})newton forces with trapped ions

We report a calibrated measurement of 174 yoctonewton (1×10^{-24}
$textnormal N = 1$
$textnormaly N$), using a cloud of 60 $^{9}Be^{+}$ ion confined in a Penning ion trap. These measurements suggest that ion traps may form the basis of a new class of ultra-sensitive deployable force sensors.

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