

Laser spectroscopy of gallium isotopes using ISCOOL

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Laser spectroscopy has been performed on isotopes of gallium at ISOLDE. This work reports the first use of ISCOOL (a gas-filled linear Paul trap) for new laser spectroscopic experiments. Ground state nuclear spin values, magnetic dipole moments, electric quadrupole moments and mean-square charge radii have been extracted for isotope masses in the range $A = 67 - 82$. An inversion of ground state spin is observed between ^{79}Ga ($I = 3/2$) and ^{81}Ga ($I = 5/2$), and an anomalous spin of $I = 1/2$ for ^{73}Ga .

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