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g-factor measurements of the 171keV (2^-) and 375keV (4^-) isomeric states of ^{98}Y

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The shape transition from spherical nuclear states ($N < 59$) towards deformed states ($N > 59$) is of high interest as it provides fertile ground for the validation of nuclear models. The $N = 59$ nuclide ^{98}Y is located precisely at this transition point and is characterized by shape coexistence of several nuclear deformations.

g-factor measurements of the (2^-) 171keV and (4^-) 375keV excited states of ^{98}Y have been performed in two separate experiments using the Lohengrin mass spectrometer at Institut Laue-Langevin (ILL). Decay gammas from the isotope were collected in $LaBr_3$ scintillator detectors coupled to Silicon Photomultipliers (SiPM), and analysis was performed via the Time-Differential Perturbed Angular Correlation (TDPAC) method.

This work presents the setup, analysis, and results of the experiment in addition to some comparisons with select nuclear models.

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