Lifetime measurements of low-spin negative parity levels in $^{160}\text{Gd}$

$^{160}\text{Gd}(n,n'\gamma)$ experiments were performed with accelerator-produced monoenergetic neutrons. Excitation functions at neutron energies from 1.5 to 2.8 MeV aided in the placement of $\gamma$ rays in the level scheme and angular distributions at three neutron energies resulted in the determination of 28 excited-level lifetimes or limits in $^{160}\text{Gd}$, including the lifetimes of several negative-parity levels attributed to octupole vibrations.

![Graph showing level scheme and lifetimes of $^{160}\text{Gd}$](image)

**FIG. 2.** A partial level scheme of $^{160}\text{Gd}$ highlighting the $K^\pi = 2^+$ $\gamma$ and negative-parity bands. The $B(E2)$ values in W.u. are shown in green and $B(E1)$ values in mW.u. in purple and scaled separately. All values are also listed in Table I.