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Lifetime Measurements in ^{74}As[1] COLIN HAWES, R. A. HARINGKAYE, K. D. JONES, K. Q. LE, Ohio Wesleyan University, J. DÖRING, Bundesamt für Strahlenshutz , B. ABROMEIT, R. DUNGAN, R. LUBNA, S. L. TABOR, P. L. TAI, VANDANA TRIPATHI, J. M. VONMOSS, Florida State University, S. I. MORROW, Houghton College — The irregular signature-splitting pattern in the positive-parity band in ^{74}As has recently been suggested to result from an underlying triaxial shape. Lifetime measurements could be used as a way to test this assertion, but so far they are unavailable for high-spin states. Thus the goal of this work was to measure as many lifetimes as possible in ^{74}As using the Doppler-shift attenuation method in order to test the existing interpretation of its positive-parity structure. High-spin states in ^{74}As were populated using the ^{14}C(^{62}Ni, pn) reaction at 50 MeV performed at Florida State University. Gamma decays were measured in coincidence using a Compton-suppressed array of 10 Ge detectors. Three lifetimes were measured within the positive-parity band and used to infer the quadrupole deformation parameter β_2 as a function of spin. The experimental β_2 values were then compared with theoretical ones extracted from total Routhian surface calculations. Although the experimental trend in the β_2 values are not reproduced by the calculations, the magnitudes of two experimental values are in agreement and triaxial shapes appear to be favored.

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