Love-Franey and free Paris interactions. The main sensitivity of the coefficients to these interactions is exhibited in $D_{LL'}$; similar predictions are observed for the remaining coefficients. Reasonable agreement of the calculations with the data is seen for some cases.

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1) J. Comfort, R. E. Segel, G. L. Moake, D. W. Miller and W. G. Love, Phys. Rev. C 23, 1858 (1981).

2) J. B. McClelland, J. M. Moss, B. Aas, A. Azizi, E. Bleszynski, M. Bleszynski, J. Geaga, G. Igo, A. Rahbar, J. B. Wagner, G. S. Weston, C. Whitten, K. Jones, S. Nanda, M. Gazzaly and N. Hintz, Phys. Rev. Lett. 52, 98 (1984).

3) R. Schaeffer and J. Raynal, Saclay Report CEA-R4000(1970); modifications by J. Comfort.

4) R. Schaeffer and J. Raynal, Saclay Report CEA-R4000(1970); modifications by W. Bauhoff.

5) P. Schwandt, private communication.

6) H. O. Meyer, P. Schwandt, W. W. Jacobs and J. R. Hall, Phys. Rev. C 27, 459 (1983).

7) C. Glover, P. Schwandt, H. O. Meyer, W. W. Jacobs, J. R. Hall, M. D. Kaitchuck and R. P. DeVito, Phys. Rev. C 31, 1 (1985).

8) P. Schwandt and E.J. Stephenson, private communication.

9) S. Cohen and D. Kurath, Nucl. Phys. A101, 1 (1967)

10) D. B. Holtcamp, W. J. Braithwaite, W. Cottingame, S. J. Green, R. J. Joseph, C. Fred Moore, C. L. Morris, J. Piffaretti, E. R. Siciliano, H. A. Thiessen and D. Dehnhard, Phys. Rev. Lett. 45, 420 (1980); J. A. Carr, F. Petrovich, D. Halderson, D. B. Holtcamp and W. B. Cottingame, Phys. Rev. C 27, 1636 (1983); and references therein.

11) C. Hyde, Ph.D. thesis, M. I. T. (1984); W. Bertozzi, LAMPF User's Meeting, 1981.

12) R. S. Henderson, Ph. D. thesis, University of Melbourne (1979); R. S. Henderson, Aust. J. Phys. 32, 411 (1979).

13) W. G. Love and M. A. Franey, Phys. Rev. C 24, 1073 (1981); W. G. Love, private communication.

14) H. V. von Geramb and K. Nakano, in The Interaction Between Medium Energy Nucleons in Nuclei - 1982, ed. H. O. Meyer (AIP Conf. Proc. 97, New York, 1983), p. 44.

$(\vec{p},p')$ REACTIONS ON HEAVY TRANSITIONAL NUCLEI

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Previously acquired data for the $^{192}Os(\vec{p},p')$ reaction at 135 MeV have now been expanded to include data for the $^{194,198}Pt(\vec{p},p')$ reactions at the same energy. These new data have been fully reduced but coupled-channels and interacting-boson model (IBM) analyses have not yet been completed. The platinum data are superior in quality to the osmium data (because of more uniform targets nearly free of contaminants); three strongly excited 4^+ states, the principal focus of these experiments, are clearly seen in each platinum isotope.

IBM analyses of the ^{192}Os data are continuing. The E2 properties of ^{192}Os are well-described by the usual (i.e. with only s- and d-bosons) IBM,[1] but E4 properties, determined using our $(\vec{p},p')$ results, are poorly described. The general thrust of our IBM analyses is to ascertain whether this failure of the IBM is due to neglecting the g-boson degree of freedom.

Although some progress[2] has been made in the inclusion of a g-boson (using the code of P. Van Isacker),[3] there are more parameters than data points when only ^{192}Os data are studied. It is hoped that our ^{194,198}Pt data will sufficiently expand the data base to permit a more definitive examination of the model.

1) D.D. Warner and R.F. Casten, Phys. Rev. C 28, 1798 (1983).

2) F.T. Baker et al., Proceedings of the International Workshop on Interacting Boson-boson and Boson-fermion Systems, Gull Lake, Michigan, May, 1984.

3) P. Van Isacker, private communication.

MULTIPOLE MOMENTS OF ^{176}Yb and ^{182}W FROM INELASTIC SCATTERING OF 134 MEV PROTONS

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We have completed the coupled-channels analysis of the cross sections and asymmetries for ground state rotational band members up to $J^\pi=6^+$ in ^{176}Yb and ^{182}W, excited in $(\vec{p},p')$ reactions at 134 MeV. One goal in this and in our similar study[1] of ^{154}Sm and ^{166}Er using the same reaction is to deduce the multipole moments of the matter distributions of these nuclei.

The measurements, typical spectra, and preliminary results were presented in last year's annual report. The final fits to these data are shown in Figs. 1 and 2. Using a theorem due to Satchler[2] the normalized multipole moments of the deformed optical model potential used to fit the data should be equal to the multipole moments of the matter distribution. This assumes that the potential is derivable from folding a central, scalar, energy- and density-independent interaction with the matter density. The multipole moments of the real part of the deformed optical model were calculated using the parameters from the final fits. These moments are given in Table 1.

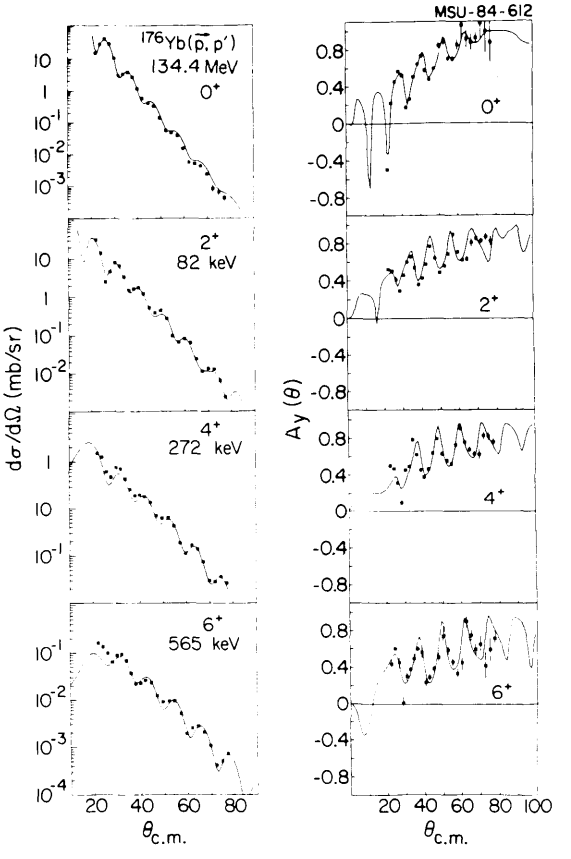

Figure 1. Data and coupled channel fits for differential cross sections and analyzing powers for excitation of ground state rotational band states to $J^\pi=6^+$ in ^{176}Yb.