wire is placed could be kept near room temperature during a high pressure and temperature run, it might be possible to obtain such a calibration. At the present time no other technique for obtaining a high temperature pressure calibration is available.[8]

The experimental data taken in the present work also give considerable insight into the hysteresis phenomena observed in resistance versus pressure runs. We originally believed that the hysteresis observed was entirely due to the pyrophyllite holding the pressure in stages. For this reason, calibration runs were made with wires at various distances from the center wire to measure the staging effect. It was found, however, that any wire completely surrounded by pyrophyllite exhibited the same hysteresis as the center wire, no matter where it was placed in the tetrahedron. Therefore, it is found that the pyrophyllite holds the same pressure throughout the volume of the tetrahedron. This is to be expected when the results of the pressure gradient studies are taken into account.

In order to find the amount of the total observed hysteresis which is caused by the holding of pressure by the pyrophyllite, runs were made with calibration wires on the face of the carbide anvil, out of the influence of the pyrophyllite. Figure 4 is a plot of the results obtained and shows that only about 30% of the observed hysteresis is caused directly by the holding of pressure by the pyrophyllite. This amount of the hysteresis is associated with the permanent density increase of pyrophyllite when subjected to pressure.[9] The remainder is then due to the pressure configuration used and is believed to be a consequence of the elastic rebound of the compressed pyrophyllite tetrahedron.

[8] H. M. Strong, *Modern Very High Pressure Techniques*, edited by R. H. Wentorf, Jr. (Butterworths, Scientific Publications, Ltd., London, 1962), p. 113.

[9] E. C. Lloyd, U. O. Hutton, and D. P. Johnson, J. Research Natl. Bur. Standards **63C**, 59 (1959).