

THE USE OF THE RELATIVE RESIDUAL IN THE APPLICATION OF THE METHOD OF LEAST SQUARES

By

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The method of least squares offers a precise method of fitting a curve describing the relation between two or more related, measurable variables, but certain criteria must be fulfilled to justify its application. First, the type of equation selected for fitting must be the true mathematical expression of the law governing the relationship of the variables. Secondly, all errors of measurement, made in obtaining the observed values of the variables when the data were collected, must be distributed according to the well-known laws of probability.¹

This paper is concerned with the latter of these two criteria. The fundamental theory upon which the method of least squares is based can be found in any text-book on the subject and need not be elaborated upon here. However, it may be well to point out a very pertinent, if somewhat elementary, aspect of the theory which facilitates the ready visualization of the fundamental concepts involved.

¹Steinmetz, C. P. *Engineering Mathematics*. McGraw-Hill Book Co., New York (1917).