**A LEAST - SQUARES APPROACH**

**TO DEPTH DETERMINATION**

**FROM**

**RESIDUAL MAGNETIC**

**ANOMALIES DUE TO SPHERES**

**AND**

**HORIZONTAL CYLINDERS**

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**ABSTRACT**

We have developed a least-squares approach to depth determination from residual magnetic anomalies due to spheres and horizontal cylinders.

The problem of depth determination from magnetic data has been transformed into the problem of finding a solution to a nonlinear equation of the form of f(z) = 0.

Procedures are also formulated to estimate the amplitude coefficient (or magnetic moment) and the index parameter (or effective angle of magnetization).

The method is applied to synthetic data with and without random error.

The validity of the method is tested on a field example from the Bankura area , India.