

CONTRACTOR REPORT

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**FITTING:
A SUBROUTINE TO FIT FOUR-MOMENT
PROBABILITY DISTRIBUTIONS TO DATA**

by

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ABSTRACT

FITTING is a Fortran subroutine that constructs a smooth, generalized four-parameter probability distribution model. It is fit to the first four statistical moments of the random variable X (i.e., average values of X , X^2 , X^3 , and X^4) which can be calculated from data using the associated subroutine CALMOM. The generalized model is produced from a cubic distortion of the parent model, calibrated to match the first four moments of the data. This four-moment matching is intended to provide models that are more faithful to the data in the upper tail of the distribution. Examples are shown for two specific cases.

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