

PACKAGE ID - 001358C760000 EXPALS

KWIC TITLE - Least Squ Fit of Lin Combination of
Exponential Decay

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LIMITATION CODE -UNL **AUDIENCE CODE** - UNL

COMPLETION DATE - 12/23/1980 **PUBLICATION DATE** - 12/23/1908

DESCRIPTION - This program fits by least squares a function which is a linear combination of real exponential decay functions. The function is $y(k) = \text{summation over } j \text{ of } a(j) * \exp(-\text{lambda}(j) * k)$. Values of the independent variable (k) and the dependent variable y(k) are specified as input data. Weights may be specified as input information or set by the program ($w(k) = 1/y(k)$).

PACKAGE CONTENTS - Media Directory; Software Abstract; Media Includes Source Code, Information File, Sample Problem Input and Output Data;

SOURCE CODE INCLUDED? - Yes

MEDIA QUANTITY - 1 CD Rom

METHOD OF SOLUTION - The Prony-Householder iteration method is used. For unequally spaced data, a number of interpolatrion options are provided. This revision includes an option to call a differential correction subroutine REFINE to improve the approximation to unequally-spaced data when equal-interval interpolation is faulty. If convergence is achieved, the probable errors in the computed parameters are calculated also.

COMPUTER - CDC7600

OPERATING SYSTEMS - Scope 2.1.

PROGRAMMING LANGUAGES - FORTRAN-IV

SOFTWARE LIMITATIONS - Generally, it is desirable to have at least 10n observations where n equals the number of terms and to input k+n significant figures if k significant figures are expected.

SOURCE CODE AVAILABLE (Y/N) - Y

HARDWARE REQS - EXPALS require about 74,062 (octal) words with the amximum number of observations or interpolated values (MMX) set at 200 and the maximum number of values for the lambda calculation (NMX) set at 25.

ABSTRACT STATUS - Released Tested 7/26/2001

SUBJECT CLASS CODE -

E S T S C
ENERGY SCIENCE & TECHNOLOGY SOFTWARE CENTER
SOFTWARE ABSTRACT

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DATE 03/11/2002

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SPONSOR - NEA

PACKAGE TYPE - TESTED