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Composition structure of integral transformations. (English. Russian original) Zbl 0604.44003
Sov. Math., Dokl. 33, 166-170 (1986); translation from Dokl. Akad. Nauk SSSR 286, 786-790 (1986).

The authors use Parseval's identity for the Mellin transform introduce the G- and W-transforms, which include as special cases the most general classical convolution and index transforms, and the Wimp transform with Meyer G-function in the kernels. They define a new space of functions in which the composition structure of these transforms is explained. They establish theorems on conditions for the existence, invertibility, and composition decomposability of the G- and W-transforms in terms of the direct and inverse Laplace transforms with power multipliers in the space of functions introduced.

Reviewer: [S.P.Singh](#)

MSC:

[44A15](#) Special integral transforms (Legendre, Hilbert, etc.)
[44A10](#) Laplace transform

Cited in **8** Documents

Keywords:

G-transform; Parseval's identity; Mellin transform; W-transforms; convolution; index transforms; Wimp transform; Meyer G-function; existence; invertibility; composition decomposability; inverse Laplace transforms