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AN INVERSION FORMULA FOR THE GENERALIZED STIELTJES TRANSFORM

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1. Introduction. The problem of finding formulae to invert the Stieltjes transforms

$$f(x) = \int_0^\infty d\alpha(t)/(x+t), \tag{1}$$

$$f(x) = \int_0^\infty \phi(t)dt/(x+t), \tag{2}$$

and the generalized transforms

$$f(x) = \int_0^\infty d\alpha(t)/(x+t)^\rho, \tag{3}$$

$$f(x) = \int_0^\infty \phi(t)dt/(x+t)^\rho, \tag{4}$$

has been solved by Widder [A, pp. 7–60][2] and by Pollard [F, pp. 14–16]. The function $\phi(t)\in L(0, \infty)$, $\alpha(t)$ is a normalized function of

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Received by the editors January 19, 1948, and, in revised form, February 26, 1948.

[1] The subject matter of this paper forms part of a dissertation presented to the University of the Witwatersrand. The author wishes to acknowledge with gratitude facilities granted by the Principal and Council of that University, and assistance subsequently given by the Council for Scientific and Industrial Research of the Union of South Africa. In particular, the author acknowledges his indebtedness to Dr. J. P. Dalton, Emeritus Professor in Mathematics of the University of the Witwatersrand.

[2] Roman letters in brackets refer to the bibliography at the end of the paper.