Nishimoto, Katsuyuki; **Yen, Chen-E.**; **Lin, Ming-Lai**
Some integral forms for a generalized zeta function. (English) Zbl 1018.11043
J. Fractional Calc. 22, 91-97 (2002).

Summary: In this paper some integral forms for a generalized zeta-function are reported. One of them is shown as follows,

$$\zeta(z;a) = \frac{1}{\Gamma(z)} \sum_{k=0}^{\infty} \int_0^{\infty} \frac{t^{z-1} e^{-\{a+(1/2)(k+1)k\}t} (1 - e^{-(k+1)t})}{1 - e^{-t}} dt,$$

where

$$\zeta(z;a) = \sum_{m=0}^{\infty} \frac{1}{(a+m)^z} \qquad (\mathrm{Re}\, z > 1).$$

MSC:

11M35 Hurwitz and Lerch zeta functions
26A33 Fractional derivatives and integrals

Keywords:

integral representations; generalized zeta-function