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Hjalmar Mellin

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Robert Hjalmar Mellin (1854–1933), a Finnish function-theorist. He studied in Helsinki University under Gösta Mittag-Leffler, in Berlin under Karl Weierstrass and Leopold Kronecker. He worked as professor of mathematics in the Helsinki Polytechnic Institute (later the Technical University of Finland).

Mellin is best known for his integral transform, the <http://planetmath.org/MellinTransform> transform

$$F(s) := \int_0^\infty t^{s-1} f(t) dt,$$

which he utilised in study of gamma function, hypergeometric functions, Dirichlet series, Riemann zeta function and related number-theoretic functions. Mellin's transform and its inverse transform

$$f(t) = \frac{1}{2\pi i} \int_{a-i\infty}^{a+i\infty} t^{-z} F(z) dz$$

are much used also in physics. Mellin himself applied his transformations for solving partial differential equations and the inverse transformations for forming asymptotic series expansions.

Mellin has addressed of relativity.