

Lerch, Mathias | Encyclopedia.com

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(*b*, milínov, near Sušice, Bohemia, 20 February 1860; *d*, Sušice, Czechoslovakia, 3 August 1922),

mathematics.

Lerch studied mathematics in Prague and, in 1884 and 1885, at the University of Berlin under Weierstrass, Kronecker, and Lazarus Fuchs. In 1886 he became a *Privatdozent* at the Czech technical institute in Prague and in 1896 full professor at the University of Fribourg. He returned to his native country in 1906, following his appointment as full professor at the Czech technical institute in Brno. In 1920 Lerch became the first professor of mathematics at the newly founded Masaryk University in Brno. He died two years later, at the age of sixty-two. In 1900 he received the grand prize of the Paris Academy for his *Essais sur le calcul du nombre des classes de formes quadratiques binaires aux coefficients entiers* [199].

Of Lerch's 238 scientific writings, some of which are quite comprehensive, 118 were written in Czech. About 150 deal with analysis and about forty with [number theory](#); the rest are devoted to geometry, numerical methods, and other subjects. Lerch's achievements in analysis were in general function theory, general and special infinite series, special functions (particularly the gamma function), elliptic functions, and [integral calculus](#). His works are note-worthy with regard to methodology. In particular he described and applied to concrete questions new methodological principles of considerable importance: the principle of the introduction of an auxiliary parameter for meromorphic functions [203] and the principle of most rapid convergence [210]. Lerch's best-known accomplishments include the Lerch theory on the generally unique solution ϕ of the equation — [73, 180]— which is fundamental in modern operator calculus; and the Lerch formula [101, 105, 116, 124], obtained originally from the theory of Malmsténian series, for the derivative of the Kummerian trigonometric development of $\log \Gamma(v)$:

BIBLIOGRAPHY

I. Original Works. A complete, chronological bibliography of Lerch's scientific works was published by J. Šrámek in *Czechoslovak Mathematical Journal*, 3 (1953), 111-122. The numbers in text in square brackets refer to works so numbered in Šrámek's listing.

II. Secondary Literature. An extensive discussion of Lerch's work in mathematical analysis was published by O. Borůvka et al. in *Práce Brněnské základny Československé akademie věd*, 29 (1957), 417-540. A detailed biography of Lerch can be found in an article by L. Frank in *Časopis pro pěstování matematiky*, 78 (1953), 119-137.

O. Borůvka