

[Queffélec, H.](#)

H. Bohr's vision of ordinary Dirichlet series; old and new results. (English) Zbl 0881.11068
J. Anal. 3, 43-60 (1995).

The author discusses briefly a theorem of Harald Bohr from 1913: $\sum_{n=1}^{\infty} a_n n^{-s}$ has a finite abscissa of uniform convergence σ_u implies $\sum_{p \text{ prime}} |a_p| p^{-s}$ converges for $\sigma > \sigma_u$, and a theorem of Hewitt and Williamson about ordinary Dirichlet series representations of the reciprocals of absolutely convergent Dirichlet series. He proves a substantial generalization of Bohr's result which leads to a probabilistic estimate connected with the determination of the abscissa of uniform convergence.

The author also obtains a new proof of the result of *E. Hille* and *H. F. Bohnenblust* [*Ann. Math.*, II. Ser. 32, 600-622 (1931; [Zbl 0001.12901](#))] that Bohr's estimate $\sigma_a - \sigma_u \leq 1/2$ (where σ_a is the abscissa of absolute convergence and σ_u as above) is best possible. This is based on a new result improving an earlier one of his. He also gives a novel proof of the result of Hewitt and Williamson using Bohr's "vision". The paper closes with some open questions.

Reviewer: [S.L.Segal \(Rochester\)](#)

MSC:

- [11M41](#) Other Dirichlet series and zeta functions
- [40A05](#) Convergence and divergence of series and sequences
- [11K99](#) Probabilistic theory: distribution modulo 1; metric theory of algorithms
- [43A46](#) Special sets (thin sets, Kronecker sets, Helson sets, Ditkin sets, Sidon sets, etc.)
- [60G15](#) Gaussian processes
- [60E15](#) Inequalities; stochastic orderings
- [30B50](#) Dirichlet series, exponential series and other series in one complex variable

Cited in **3** Reviews
Cited in **28** Documents

Keywords:

[Dirichlet series](#); [probabilistic estimate](#); [abscissa of uniform convergence](#); [open questions](#)