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Artikel: SOME CONVERSE THEOREMS ON THE ABSCISSAE OF SUMMABILITY OF GENERAL DIRICHLET SERIES

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Bosanquet ([4], Theorem 3). In the present context, it is rather less effective than the completely independent two-fold result of Karamata's in the same direction ([9], Théorèmes 1a), 3f)), reformulated as Theorem A. That is to say, precisely, Theorem A gives rise to a basic converse theorem on abscissae of summability of general Dirichlet series (Theorem I of this paper) which is more natural and suggestive as well as more comprehensive than the like basic theorem resulting from the line of development followed by Chandrasekharan and Minakshisundaram ([6], p. 86, Theorem 3.71). ¹⁾

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REFERENCES

- [1] ANANDA-RAU, K., *On some properties of Dirichlet's series*. Smith's Prize Essay, Cambridge 1918.
- [2] —— On the convergence and summability of Dirichlet's series. *Proc. London Math. Soc.*, (2), 34 (1932), 414-440.
- [3] BOSANQUET, L. S., On the summability of Fourier series. *Proc. London Math. Soc.*, (2), 31 (1931), 144-164.
- [4] —— Note on convexity theorems. *J. London Math. Soc.*, 18 (1943), 239-248.
- [5] —— Note on the converse of Abel's theorem. *J. London Math. Soc.*, 19 (1944), 161-168.
- [6] CHANDRASEKHARAN, K. and S. MINAKSHISUNDARAM, *Typical Means* (Tata Institute of Fundamental Research Monographs in Mathematics and Physics, No. 1), Bombay 1952.
- [7] GANAPATHY IYER, V., Tauberian and summability theorems on Dirichlet's series. *Ann. of Math.*, 36 (1935), 100-116.
- [8] KARAMATA, J., On an inversion of Cesàro's method of summing divergent series (Serbian). *Glas. Srpske Akad. Nauk*, 191 (1948), 1-37.
- [9] —— Quelques théorèmes inverses relatifs aux procédés de sommabilité de Cesàro et Riesz. *Acad. Serbe Sci. Publ. Inst. Math.*, 3 (1950), 53-71.
- [10] MINAKSHISUNDARAM, S. and C. T. RAJAGOPAL, An extension of a Tauberian theorem of L. J. Mordell. *Proc. London Math. Soc.*, (2), 50 (1945), 242-255.
- [11] —— and C. T. RAJAGOPAL, On a Tauberian theorem of K. Ananda Rau. *Quart. J. Math. Oxford Ser.*, 17 (1946), 153-161.
- [12] RAJAGOPAL, C. T., On Tauberian theorems for the Riemann-Liouville integral. *Acad. Serbe Sci. Publ. Inst. Math.*, 6 (1954), 27-46.

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¹⁾ Indeed the Chandrasekharan-Minakshisundaram theorem just referred to is deducible from Theorem I, its case $\sigma_r < \alpha + \mu$ [or, case $\sigma_r \geq \alpha + \mu$] from part (A) [or, part (B)] of Theorem I with hypothesis (2.2) (b) and $x^\rho = x^\alpha \{0(x)\}^\mu$, $0(x) = x^{(r-\alpha+\gamma)/(r+\mu)}$, $\sigma_r < \gamma < \alpha + \mu$ [or, hypothesis (2.4) (b) and $x^\rho = x^{\alpha+\mu}$].

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