

The Fréchet algebra of uniformly convergent Dirichlet series and operators defined on it.

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In the first part of this lecture we recall several results about Bohr's problem concerning the largest possible strip on which a Dirichlet series of complex numbers converges uniformly but not absolutely. We will mention classical work by Harald Bohr (1913), Bohnenblust and Hille (1931), and recent one by Boas, Defant, Frerick, García, Khavinson, Maestre, Ortega-Cerdá, Ounaïes and Seip, among others.

In the second part we report about our work. Motivated by a classical result of Bohr that the abscissa of boundedness and the abscissa of uniform convergence coincide for a Dirichlet series and by an improved Montel principle due to Bayart in 2002, we investigate the Fréchet algebra of all Dirichlet series that are uniformly convergent in all the half-planes of complex numbers with positive real part. When endowed with its natural metrizable locally convex topology, this space is Schwartz, not nuclear, has a Schauder basis and contains isomorphically the space of analytic functions on the open unit polydisc. The behaviour of composition operators, and the operators of differentiation and integration in this space is also investigated.

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