

*Dirichlet's Lectures on "Elements of Series" from WS 1840/41:
An Elementary Exposition of Cauchy's "Cours d'analyse"*

Hans Fischer
Katholische Universität Eichstätt-Ingolstadt

In his lectures on analytic topics, Dirichlet in particular treated current developments of French mathematics (e.g., by Poisson, Cauchy), and thereby influenced numerous and important students (such as Seidel, Riemann, Dedekind) during the pre-Weierstrass period. Some of these lectures were later published, but concerning unpublished lecture notes more extensive studies are so far only available for the field of probability theory [Fischer 1994, Merzbach 2018, chapt. 16]. Cauchy's influence, in particular, on Dirichlet in the field of Analysis and the modifications Dirichlet gave to Cauchy's concepts only become entirely clear through unpublished lecture notes. My talk will provide insight how this applies to the theory of series in Cauchy's "Cours d'analyse". Dirichlet, on the one hand, omitted continuity considerations, but on the other hand, he gave a far more direct and streamlined exposition, in which also, in contrast to Cauchy, some space was given to the problem of rearrangement of series. In this way, Dirichlet contributed quite substantially to the popularization of the "Cours".

Fischer, H. 1994. Dirichlet's Contributions to Mathematical Probability Theory. *Historia Mathematica*, 21, 39--63.
Merzbach, U. 2018. *Dirichlet, A Mathematical Biography*. Birkhäuser, Basel