

Hence $\lim_n c_n$ and $\lim_n b_n$ exist and are equal, i.e. $\lim_n \overline{\lim}_m a_{mn}$ exists. From the symmetry of the condition, we conclude that $\lim_m \overline{\lim}_n a_{mn}$ exists also. The identity of the two limits is then a consequence of the condition of our theorem and Statement A.

We note finally that the Cauchy condition for convergence of the double limit, $\lim_{mn} a_{mn}$, is the special case of our condition in which $m_{\epsilon n_1}$ and $n_{\epsilon m_1}$ are independent of n_1 and m_1 respectively, and can therefore be taken as m_ϵ and n_ϵ , respectively.

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ON BOUNDED REGULAR FRONTIERS IN THE PLANE*

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1. *Introduction.* The term *regular frontier* has been introduced by P. Urysohn† to designate a continuum which is the frontier of two or more components of its complement. Regular frontiers in the plane have been discussed by various authors. A. Rosenthal‡ has shown that a continuum which is the union of two bounded continua that are irreducible between the same pair of points and have no other common points is a regular frontier. R. L. Moore§ has given necessary and sufficient conditions that a bounded continuum be a regular frontier whose complement has exactly two components. C. Kuratowski|| has given necessary conditions for a continuum to be a regular frontier which is the frontier of every component of its complement.

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† P. Urysohn, *Mémoire sur les multiplicités Cantorienes*, *Fundamenta Mathematicae*, vol. 7, p. 98.

‡ A. Rosenthal, *Teilung der Ebene durch Irreduzible Kontinua*, *Sitzungsberichte der Münchener Akademie*, 1919.

§ R. L. Moore, *Concerning the common boundary of two domains*, *Fundamenta Mathematicae*, vol. 6, pp. 203–213.

|| C. Kuratowski, *Sur les coupures du plan*, *Fundamenta Mathematicae*, vol. 6, pp. 130–145.