

“limit” may be defined for general systems of objects in an analogous manner, without excluding the possibility of special examples of the Cesàro type.

10. The nodes and perihelia of the four inner planets, notably Venus and Mars, present certain unexplained motions in the Newtonian mechanics. The note of Professor James compares the secular changes in the elements of these planets produced by the uniform rotation of the empirical about the inertial system of reference with the corresponding changes brought about by the use of the Minkowskian law of attraction instead of the Newtonian.

11. In this paper Dr. Frizell shows that a one-to-one relation exists between the continuum and a set of terms in the expansion of an infinite determinant whose elements are restricted to the principal diagonal and two adjacent diagonals.

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## SERIES OF LAPLACE'S FUNCTIONS.

BY PROFESSOR B. H. CAMP.

(Read before the American Mathematical Society, October 28, 1911.)

THE most important theorem on the validity of the expansion of an arbitrary function in a series of Laplace's functions has been proved by Jordan in his *Cours d'Analyse*, second edition, volume 2, page 252. The conditions there stated are that the given function be continuous on the surface of the sphere within some small circle about the point at which the expansion is made, and that it have limited variation along every great circle through this point.

The object of the present paper is to correct an error in Jordan's theorem, and to furnish new conditions sufficient for the validity of these expansions. To the conditions announced by Jordan should be added the requirements that the values of the variations be all less than some fixed number, and that these variations be “uniform with respect to all great circles through the point.” His error is discussed in a remark following Corollary 2.