SINGULAR POINTS OF ANALYTIC TRANSFOR-MATIONS.

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LET a transformation be defined by the equations

 $x_i = \varphi_i (u_1, \ldots, u_n) \qquad (i = 1, \ldots, n),$

where the functions φ_i are meromorphic in the origin and the first μ of them, $0 < \mu \leq n$, have a non-essential singularity of the second kind there, the remaining $n - \mu$ functions being analytic or having a pole there. Let the point (x) be interpreted in the space of analysis.

Let those points of the region

$$|u_k| < \eta_k \qquad (k = 1, \ldots, n),$$

where η_k is a positive number, in which no function φ_i has a non-essential singularity of the second kind, be denoted by \mathfrak{T} , and let the points (x) which form the images of the points (u)of \mathfrak{T} constitute the region M. There will be certain points of the (x)-space which will lie on the boundary of M, no matter how far \mathfrak{T} is restricted. The manifold of these points shall be denoted by \mathfrak{M} .

The object of this note is to communicate the following theorem, the proof of which will shortly be published elsewhere.

THEOREM. The manifold \mathfrak{M} is made up of a finite number of algebraic manifolds of the following kind:

In the space of the first μ variables (x_1, \ldots, x_{μ}) there exists a manifold \Re formed by a finite number of irreducible algebraic curves (k = 1), surfaces (k = 2), or hypersurfaces of order $k < \mu$, the number k being the same for all; or finally, if $\mu < n$, \Re may include all the points of the space in question, and we set here $k = \mu$.

Then \mathfrak{M} consists of the points (x_1, \ldots, x_n) , where (x_1, \ldots, x_{μ}) is an arbitrary point of \mathfrak{K} , and

$$x_j = a_j = \frac{g_j(0, \ldots, 0)}{G_j(0, \ldots, 0)}$$
 $(j = \mu + 1, \ldots, n).$

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