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Un théorème de transfert pour les disques singuliers réguliers. (French) Zbl 0553.12014
Cohomologie p -adique, Astérisque 119-120, 151-168 (1984).

[For the entire collection see [Zbl 0542.00006](#).]

Let us consider a differential system $x \frac{d}{dx}(U) = GU$ where the entries of the matrix G are analytic elements (i.e. uniform limits of rational fractions without poles in the disk $|x| < 1$ of \mathbb{C}_p). Moreover suppose that the differences of the eigenvalues of $G(0)$ are not Liouville numbers. Consider the formal solution near 0: $U = Yx^{G(0)}$. This paper is devoted to show that the matrix Y is analytic in $0 < |x| < 1$ if (and only if) there exists an analytic in the generic disc $D(t,1)$ solution of the system. This "transfer theorem" was known first for ordinary discs (i.e. $G(0) = 0$) from Dwork's works on p -adic differential equations. An application to an index theorem of Adolphson is also given. The proof is based on Frobenius structures and on the splitting of matrices in singular factors.

MSC:

[12H25](#) p -adic differential equations

Cited in **4** Reviews
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Keywords:

[analytic solution](#); [Adolphson index theorem](#); [transfer theorem](#); [p-adic differential equations](#)