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(These summaries may be reproduced)

F. ROBERT, M. CHARNAY, F. MUSY, Grenoble: *Itérations chaotiques série-parallèle pour des équations non-linéaires de point fixe.* Apl. mat. 20 (1975), 1—38. (L'article original.)

On étend à des équations non linéaires de point fixe des méthodes d'itérations chaotiques étudiées par Chazan et Miranker pour des systèmes linéaires.

L'outil de base de cette étude est la notion d'opérateur contractant en norme vectorielle: c'est par l'intermédiaire des matrices de contraction que passent, dans ce contexte d'opérateurs non linéaires, les résultats de convergence classique des méthodes itératives de résolution de systèmes linéaires. Tous ces résultats sont en fait cas particulier d'un même théorème (Théorème 4 dans le texte) qui règle la convergence d'une itération chaotique non linéaire. On retrouve, comme cas particuliers, des résultats de Ortega et Rheinboldt pour le cas non linéaire.

KAMILA GUTTENBERGEROVÁ, Praha: *Optimal discrete signal representation by the system of discrete orthonormal exponentials in conjugate pairs of exponents.* Apl. mat. 20 (1975), 39—47. (Original paper.)

The paper deals with optimal discrete signal representation by the system of discrete orthonormal exponentials with conjugate pairs of exponents on digital computer. The necessary condition of approximation error minimization of the energy approximation both over n coefficients and n exponents leads to a system of $2n$ equations which are nonlinear in exponents. The equivalent condition is found by means of interpretation in the abstract vector space which, however, requires solutions of the system of nonlinear algebraic equations. A linear iterative method is proposed for solution of the described equation system. Examples illustrating the theoretical conclusions of the method described are presented.

The method provides a minimum number of parameters characteristic of the signal given while preserving the required accuracy of signal approximation, on the one hand, and is suitable for use for empiric discrete signals not known analytically, on the other.

OLDŘICH JOHN, JINDŘICH NEČAS, Praha: *On the solvability of von Kármán equations.* Apl. mat. 20(1975), 48—62. (Original paper.)

Solvability of the general boundary value problem for von Kármán system of nonlinear equations is studied. The problem is reduced to an operator equation. Coerciveness of the corresponding operator is proved, which together with its other properties implies the existence of a solution.