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### AVERTISSEMENT

Ce volume contient la plupart des textes des conférences des "Journées singulières de Dijon" organisées du 12 au 16 juin 1978 par l'équipe de Topologie du Département de Mathématiques de l'Université de Dijon.

En tête de ce volume figure la liste des participants ainsi que les résumés des différentes conférences.

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TABLE DES MATIÈRES

	Pages
F. DUMORTIER et R. ROUSSARIE - Etude locale des champs de vecteurs à paramètres.	7

These notes provide a survey of certain results concerning singularities of vector fields and their unfoldings. Most of them were obtained in recent years. For many results we only give the reference or at most a glimpse of the method used in the proof. In the last chapter a special emphasis has been put on certain techniques in bifurcation theory, which we introduce by applying them to special simple situations.

M. GOLUBITSKY and D. TISCHLER - A Survey on the Singularities and Stability of Differential Forms.	43
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Known results about generic classifications of germs of  $C^\infty$  differential p-forms in both the category of closed forms and not necessarily closed forms are discussed. In addition, a new result is included which completes a generic classification of non-zero n-1 forms, showing that these normal forms are parameterized by an infinite dimensional moduli space.

C. CAMACHO - On the Local Structure of Conformal Mappings and holomorphic vector fields in $C^2$ .	83
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The main result of this work is the following :

Let  $f(z) = \sum_{k \geq 1} a_k z^k$ , with  $a_1^n = 1$ ,  $a_1^m \neq 1$  for  $0 < m < n$ , then either  $f^n$  is the identity, or there is a local homeomorphism  $h$ ,  $h(0) = 0$ , and an integer  $k \geq 1$  such that

$$f \circ h \circ h^{-1}(z) = a_1 z (1 + z^{kn})$$

We derive, from this result topological properties for particular holomorphic vectorfields with a singularity at  $0 \in \mathbb{C}^2$ .

M. CHAPERON - Singularités en géométrie de contact.	95
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After a (long) introduction to contact geometry, we state several results on the singularities of infinitesimal contact transformations. The local models we obtain can be used in the study of partial (pseudo-)differential equations, though we do not go into this here.

J.P. FRANCOISE - Modèle local simultané d'une fonction et d'une forme de volume.	119
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We give a generalization of a theorem of J. VEY about simultaneous reductions of holomorphic couples  $(P, \omega)$  where  $P$  (resp.  $\omega$ ) is a germ of function (resp. of volume form) ; here

we are concerned with the case when  $P$  has any isolated singularity at  $\{0\} \in \mathbb{C}^n$ .

- N.H. KUIPER - La topologie des singularités hyperboliques des actions de  $\mathbb{R}^2$ . 131

An  $\mathbb{R}^2$ -action on  $\mathbb{R}^n$  is obtained from two commuting vectorfields  $F_1$  and  $F_2$  by integrating

$$dx = F_1(x) dt_1 + F_2(x) dt_2.$$

For  $2 \leq n \leq 4$ , Camacho found 11 topological types of hyperbolic 2-foliation singularities. For  $n \geq 5$  there exist moduli of such topological types. An essential tool is the characteristic configuration of § 3.

- I. KUPKA - L'indice d'un point singulier d'un champ. 151

The present talk is an exposition of results contained in the paper of Arnold in *Funct. Anal. y ego prilozh.* vol. 12 f fasc. 1 (1978). The purpose of the note is to give some upper bounds for the index of a vector field of polynomial or gradient type at an isolated singular point. As a by-product a new proof of the Petrowsky-Oleinik inequalities is obtained. Interesting conjectures relating the index to hodge numbers and combinatorial invariants of Newton polyhedras are stated.

- J.P. RAMIS - Dévissage Gevrey. 173

We give precise estimations of Gevrey type of the formal solution of an analytic differential equation.

- R. THOM - Tectonique des Plaques et Théorie des Catastrophes. 205

In this article we apply the elementary catastrophe scheme to the theory of plate-tectonics. It is shown how the lines of discontinuity of the kinematics of the earth's surface, can be interpreted as the catastrophe set of a field of local potentials, determining the local velocities. More generally, we give constraints which are supposed to apply to earth's Kinematics and we derive from them the theory of volcanic activity.

- D. TROIMAN - Interprétations topologiques des conditions de Whitney. 233

Results from the author's thesis are described showing that the regularity conditions (a) and (b) imposed on stratifications by H. Whitney are natural in differential topology: (1) there are equivalent "geometric" conditions, (2) (a)-regularity is precisely the condition required for transversality to a stratification to be stable. We conclude by considering other geometric conditions which are equivalent to (a)-regularity when curve selection is available.

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