



# 20<sup>èmes</sup> Journées des Actinides

## PROGRAM ABSTRACTS LIST OF PARTICIPANTS

Organized by  
Vladimir Sechovsky and colleagues  
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Charles University  
121 16 Prague, Czechoslovakia

Dear colleagues,

Journées des Actinides - the annual informal meeting of the "actinide community" - has a long tradition dated since early seventies. The Prague group has been participating at these conferences since 1986 mainly thanks to the generosity of organizers. For this year we have the chance to pay it back a little bit by organizing the JdA in Prague.

The year 1990 has a special importance for all of us in Czechoslovakia because of the coming free elections in June, which shall be a very important step to democracy. Therefore we are happy that we have the honour to welcome you in our country within this special period.

Journées des Actinides used to take place in different CEC countries or in some other countries from the "West Europe" and also in Israel. We believe that the political changes which happened last year in the so-called "East Europe" are not of temporary character and that they started a new period of Europe without any artificial and senseless curtains. Hence, we are really happy that we need not mention that the 20èmes Journées des Actinides take place for first time in "East Europe" but can simply say that it is organized again in one of the **democratic European countries**.

We are pleased to acknowledge that the 20èmes Journées des Actinides are organized under the auspices of His Magnificence the Rector of the Charles University Prof. Palouš and the Dean of the Faculty of Mathematics and Physics Prof. Drbohlav, who will address the conference during the opening session. All participants with their companions are sincerely invited to Carolinum, the historical centre of the Charles University, on Wednesday, April 18, for the reception by His Magnificence the Vice-Rector Prof. Lojda.

Finally I would like to acknowledge my special thanks to my colleagues L. Havela, M. Diviš, L. Jirman, I. Koutníková, P. Myšák, P. Nozar, Z. Smetana, P. Svoboda and P. Šťastný for their work before and during the conference.

Prague, April 1990

V. Sechovský

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### GENERAL INFORMATION

Colour marking of badges : participants - red, accompanying persons - blue, organizers - green. Financial matters (registration fee of those who have not paid in advance) are to be arranged with M.Diviš. Please mind, that the conference fee does not include any hotel extras (such as phone, fax, telex, room service, laundry, sauna, fitness centre etc.). Be so kind and pay your extras to the hotel cashier at latest when checking out. - CHECK OUT TIME: 12.00 P.M. -

In case of any need, do not hesitate and contact one of the organizers.

**Oral presentations:** A total of 15 minutes is allowed for each communication, including discussion.

**Posters:** Please, attach your posters before the poster session (Wednesday, April 18, 14.00 p.m.) and remove them after the last session on Thursday, April 19.

Some posters will be selected by M.Pagès, J.M.Fournier for a short oral presentation during the first Thursday afternoon session.

**Exhibition:** For your convenience we have organized a small exhibition of scientific books and journals of Elsevier Science Publishers B.V. In case you intend to order some publications, please, contact L.Jirman.

PROGRAM

TUESDAY, APRIL 17

17.00 - 22.00 REGISTRATION, WELCOME PARTY

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WEDNESDAY, APRIL 18

8.00 - 8.45 REGISTRATION

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9.00 - 10.00 OPENING SESSION

Welcome address by V. Sechovský, Conference Chairman,  
and K. Drbohlav, The Dean of the Faculty of Mathematics  
and Physics of the Charles University

1.1. 4f, 5f AND 3d INTERMETALLIC COMPOUNDS;  
SIMILARITIES AND DIFFERENCES

B. R. Coles

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10.00 - 10.20 COFFEE BREAK

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10.30 - 12.00 ELECTRONIC STRUCTURE

Chairperson: P. F. de Châtel

2.1. SURFACE ELECTRONIC STRUCTURE AND CHEMISORPTION  
OF PLUTONIUM AND URANIUM

B. R. Cooper, O. Eriksson, Y. G. Hao and G. W. Fernando

~~2.2. NEW MTO BAND CALCULATIONS OF EQUILIBRIUM PROPERTIES  
OF ACTINIDE METALS~~

M. Penicaud

2.3. BAND STRUCTURE CALCULATIONS:

THE ROLE OF HYBRIDIZATION IN 1:1:1 COMPOUNDS

T. Gasche, M. S. S. Brooks and B. Johansson

2.4. RELATIVISTIC EFFECTS ON THE THERMAL EXPANSION  
OF THE ACTINIDE ELEMENTS

P.Söderlind, B.Johansson, L.Yongming and L.Nordström

2.5. IS PuSe A HIGH-KONDO TEMPERATURE METAL?  
A PHOTOEMISSION STUDY

J.Naegele, F.Schiavo and J.C.Spirlet

→ Benedict

2.6. THE PUZZLE OF THE Pu CHALCOGENIDES  
AND THEIR ELECTRONIC STRUCTURE

P.Wachter, F.Marabelli and B.Bucher

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12.00 - 14.00 LUNCH

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14.00 - 16.00 POSTER SESSION

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17.00 - 19.00 RECEPTION IN CAROLINUM

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THURSDAY, APRIL 19

9.00 - 10.00 Np Pnictides and Chalcogenides - Physics  
Chairperson: G.H.Lander

3.1. MAGNETIC STRUCTURE OF NpTe

P.Burlet, J.M.Fournier, E.Pleska, J.Rossat-Mignod,  
J.P.Sanchez, J.Rebizant, J.C.Spirlet and O.Vogt

3.2. MAGNETIC STRUCTURES OF  $\text{NpSb}_{0.90}\text{Te}_{0.10}$  AND  
 $\text{NpSb}_{0.95}\text{Te}_{0.05}$

P.Burlet, E.Pleska, J.Rossat-Mignod, J.P.Sanchez,  
J.Rebizant, J.C.Spirlet and O.Vogt

3.3. MAGNETIC PROPERTIES OF NpP SINGLE CRYSTALS

K.Mattenberger, O.Vogt, J.Rebizant and J.C.Spirlet

3.4. ELECTRICAL TRANSPORT PROPERTIES ON NpAs SINGLE CRYSTAL  
E.Pleska, J.M.Fournier, J.Chiapusio,  
J.Rossat-Mignod, J.Rebizant, J.C.Spirlet and O.Vogt

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10.00 - 10.30 COFFEE BREAK

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10.30 - 11.45 MAGNETIC PROPERTIES  
Chairperson: P.Wachter

4.1. X-RAY MAGNETIC SCATTERING  
- NEW POSSIBILITIES FOR ACTINIDE RESEARCH  
W.G.Stirling, D.Gibbs and G.H.Lander

4.2. STATIC AND DYNAMIC PROPERTIES  
OF THE INTERNAL FIELD IN USb  
L.Asch, G.M.Kalvius, A.Kratzer, F.J.Litterst,  
F.N.Gygax, A.Schenck, K.Mattenberger and O.Vogt

4.3. SEARCH FOR URANIUM-BASED MAGNETO-OPTICAL MEDIA  
FOR THERMOMAGNETIC WRITING ABOVE ROOM TEMPERATURE  
J.Schoenes, H.Brändle and F.Hulliger

4.4. MOESSBAUER STUDY OF THE MAGNETIC PROPERTIES OF NpCo<sub>2</sub>  
J.P.Sanchez, J.Rebizant and J.C.Spirlet

4.5. MAGNETIC PROPERTIES OF UNiGe  
E.Brück, A.A.Menovsky, F.R. de Boer, K.H.J.Buschow,  
V.Sečovský, L.Havela and P.Nozar

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11.45 - 14.00 LUNCH

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14.00 - 15.00 ORAL PRESENTATION OF SELECTED POSTERS  
Chairpersons: M.Pagès, J.M.Fournier

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15.00 - 15.30 COFFEE BREAK

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15.30 - 17.00 CHEMISTRY

Chairperson: P.Zanella

5.1. CURIUM OXIDES: PRESENT PERSPECTIVE ON STOICHIOMETRY  
AND THERMOCHEMISTRY

L.R.Morss

5.2. ORGANO-f-ELEMENT THERMOCHEMISTRY

S.Bettonville, J.Goffart and J.Fuger

5.3. PHASE TRANSITIONS AND HIGH TEMPERATURE STRUCTURES

IN TRICYCLOPENTADIENYL-CHLOROURANIUM(IV),  $U(C_5H_5)_3Cl$

P.Raison, A.Delapalme, G.H.Lander, M.Klat,

P.Schweiss, B.Kanellakopoulos, C.Apostilidis and

J.Rebizant

5.4. ACTINIDES SOLVENT EXTRACTION RESEARCH

C.Musikas, C.Cuillerdier and N.Condamines

5.5. EXTRACTION CHEMISTRY OF ACTINIDE CATIONS

BY N,N-DIALKYLAMIDES

N.Condamines and C.Musikas

5.6. TERNARY ACTINOIDMETAL BORON CARBIDES

P.Rogl

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19.00 - 22.00 CONFERENCE DINNER

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FRIDAY , APRIL 20

8.30 - 9.45            **PHYSICAL PROPERTIES, CRYSTAL FIELD**

Chairperson: P.Erdős

6.1. THE NATURE OF THE PHASE TRANSITION IN  $UMn_2Si_2$  AND  
 $UMn_2Ge_2$

A.Budkowski, A.Szytuła and Z.Tomkowicz

6.2. HEAT CAPACITY OF MIXED OXIDES  $(U,X)O_{2-x}$  WITH X = Pu  
OR Gd

M.Beauvy, G.Cecilia and R.Chipaux

6.3. LOW ENERGY EXCITATIONS IN  $NpO_2$  AS REVEALED BY  
NEUTRON SCATTERING

R.Caciuffo, G.Amoretti, J.M.Fournier, A.Blaise,  
R.Osborn, A.D.Taylor, J.Larroque and M.T.Hutchings

6.4 OPTICAL SPECTROSCOPY OF ACTINIDE IONS IN SOLID.  
COMPARISON WITH LANTHANIDES

J.C.Krupa

6.5. X-RAY ABSORPTION ON THE L-EDGES  
OF LIGHT ACTINIDE COMPOUNDS

S.Bertram, G.Kaindl, J.Rebizant, J.C.Spirlet

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9.30 - 10.00           **COFFEE BREAK**

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10.00 - 11.30        **SUMMARY**

Chairpersons: B.R.Cooper, G.M.Kalvius

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## POSTERS - CHEMISTRY

- C1 SURFACE CHEMISTRY OF U-INTERMETALLICS  
STUDIED BY PHOTOEMISSION  
T.Almeida, L.Havela, J.Naegele and J.C.Spirlet
- C2 STRUCTURAL CHEMISTRY OF URANIUM-ALUMINIUM-SILICIDES  
P.Weitzer and P.Rogl
- C3 THE TERNARY SYSTEM URANIUM-BORON-NITROGEN  
H.Klesnar and P.Rogl
- C4 ELECTRONIC STRUCTURE OF  $\text{UO}_2\text{Cl}_4^{2-}$ ,  $\text{NpO}_2\text{Cl}_4^{2-}$  AND  
 $\text{PuO}_2\text{Cl}_4^{2-}$   
V.G.Pershina, N.I.Suraeva and G.V.Ionova
- C5 INFLUENCE OF CRYSTAL-FIELD EFFECTS  
ON PERIODICITY OF PROPERTIES OF ACTINYL COMPOUNDS  
G.V.Ionova, V.G.Pershina and N.I.Suraeva
- C6 NEW MANY-ELECTRON SEMI-EMPIRICAL METHOD  
OF QUANTUM-CHEMICAL CALCULATION OF CRYSTAL FIELD  
SPLITTINGS IN ACTINIDE COMPLEXES: CRYSTAL FIELD  
CALCULATIONS IN  $\text{PaCl}_6^{2-}$ ,  $\text{UX}_6^-$  (X = F, Cl, Br),  $\text{UCl}_6^{2-}$   
COMPLEXES IN  $\text{UO}_2$  AND  $\text{NpO}_2$  CRYSTALS  
V.S.Mironov and S.P.Rosov
- C7 ON THE NUCLEAR QUADRUPOLE COUPLING AND ISOMER SHIFT  
OF NEPTUNIUM COMPOUNDS: EXPERIMENTAL DATA  
AND SOME SEMIEMPIRICAL EXPLANATIONS  
J.Jové and P.Pyykkö
- C8 CRYSTAL STRUCTURES OF DIBENZOATODIOXOURANIUM(VI),  
OF BIS(DIPICOLINATO)DIOXOURANIUM(VI). MONOPICOLINATE.  
HEXAHYDRATE AND OF DIPICOLINATODIOXOURANIUM(VI)  
A.Cousson, J.Proust, P.Plazanic, F.Nectoux,  
E.N.Rizkalla and M.Pagès

- C9 CHLORO-NEPTUNIUM(IV) COMPLEXES  
CONTAINING POLY(PYRAZOL-1-YL) BORATE LIGANDS  
C.Apostilidis, B.Kanellakopoulos, R.Maier, N.Marques,  
A.Pires de Matos and I.Santos
- C10 SYNTHESIS AND STRUCTURE OF  
HYDROTRIS(3,5-DIMETHYLPYRAZOL-1-YL) BORATOTRIACETATE  
URANIUM(IV):  $U[HB(3,5-Me_2Pz)](CH_3CO_2)_3$   
A.Domingos and N.Marques
- C11 DIBUTYLPHOSPHATE COMPLEXES OF ACTINIDES.  
HETEROMETALLIC, MIXED VALENCE AND MIXED LIGAND  
INSOLUBLE COMPOUNDS  
J.Livet, C.Musikas and X.Vitart
- C12 PORPHYRINIC COMPLEXES WITH La AND Ac.  
SYNTHETIC METHODS AND ORIGINAL GEOMETRY  
OF THE FINAL COMPOUNDS  
A.G.Coutsolelos
- C13 SPECIAL SILICON DETECTORS FOR THE ACTINIDE ASSAY IN  
SNOW FIELDS IN HIGH TATRAS  
R.Tykva, J.Kopešťanský, S.Staněk and I.Burčík

## POSTERS - PHYSICS

- P1 PROGRESS IN THE STUDY OF THE CHARGE-DENSITY-WAVE  
IN ALPHA-URANIUM IN 1989  
G.H. Lander
- P2 A STUDY OF THE MAGNETIZATION DENSITY OF  $UCoAl$   
BY POLARIZED NEUTRON EXPERIMENTS  
A. Delapalme and B. Gillon
- P3  $\mu$ SR ON  $NpAl_2$   
K. Aggarwal, L. Asch, S. Fredo, J. Gal, F.N. Gygax,  
B. Hitti, G.M. Kalvius, A. Kratzer, F.J. Litterst,  
K.H. Münch and A. Schenk
- P4 NEW MAGNETIC PHASES AND UNIAXIAL STRESS EFFECTS  
IN  $UP_{1-x}S_x$  SOLID SOLUTIONS  
E. Nigrelli, C. Breandon, H. Bartholin, R. Tchapoutian,  
K. Mattenberger and O. Vogt
- P5 STRUCTURAL CHEMISTRY AND MAGNETIC BEHAVIOR  
OF BINARY URANIUM SILICIDES  
K. Remschnig, H. Noël and P. Rogl
- P6 STRUCTURAL AND MAGNETIC STUDIES  
OF THE  $UAl_{3-x}Sn_x$  SYSTEM  
Z. Zolnierek and D. Kaczorowski
- P7 MAGNETIC PROPERTIES  
OF  $UAu_2$  AND  $U_{14}(Cu, Ag)_x Au_{51-x}$  COMPOUNDS  
V.H. Tran and R. Troc
- P8 MAGNETIC PROPERTIES OF  $UCu_3Al_2$  AND  $UCu_{3.5}Al_{1.5}$   
H. Nakotte, E. Brück, F.R. de Boer and K.H.J. Buschow
- P9 ELECTRICAL PROPERTIES OF  $UCuAs_2$  SINGLE CRYSTALS  
D. Kaczorowski and J. Schoenes

- P10 MAGNETIC PROPERTIES  
OF  $U_x La_{1-x} Al$  AND  $U_x Y_{1-x} Al$  COMPOUNDS  
E. Gratz, E. Burzo and P. Lukaci
- P11 MAGNETIC PROPERTIES OF  $UFe_{12-x} Si_x$   
A. V. Andreev, S. V. Andreev and E. N. Tarasov
- P12 MAGNETIC PROPERTIES OF  $Th_2 Fe_{14} B$  AND ITS HYDRIDE  
A. V. Andreev and M. I. Bartashevich
- P13 MAGNETIC ORDERING IN  $Er_{1-x} U_x Ga_2$  SYSTEM  
N. V. Baranov, P. E. Markin and E. Sinitzin
- P14 UNIFORM AOM INTERPRETATION OF THE CRYSTAL FIELD  
EFFECT IN URANIUM (5+) FLUORIDE COMPOUNDS  
Z. Gajek and J. Mulak
- P15 HIGH PRESSURE INVESTIGATION OF BORIDES, DIOXIDES  
AND TETRACHLORIDES OF ACTINIDES USING X-RAY  
DIFFRACTION  
J. P. Dancausse, S. Heathman, E. Gering, U. Benedict,  
C. Apostolidis, L. Gerward and J. Staun Olsen
- P16 ELECTRICAL TRANSPORT PROPERTIES  
OF  $U_x Th_{1-x} Sb$  SINGLE CRYSTALS FROM 2 TO 1000 K  
J. Schoenes and O. Vogt
- P17 SPATIAL PARITY VIOLATION IN 59.6 KEV TRANSITION  
OF Np-237 NUCLEUS  
L. V. Inzhechik, A. S. Khlebnikov and V. G. Tsinoev