



UNIVERSITE DE RENNES 1

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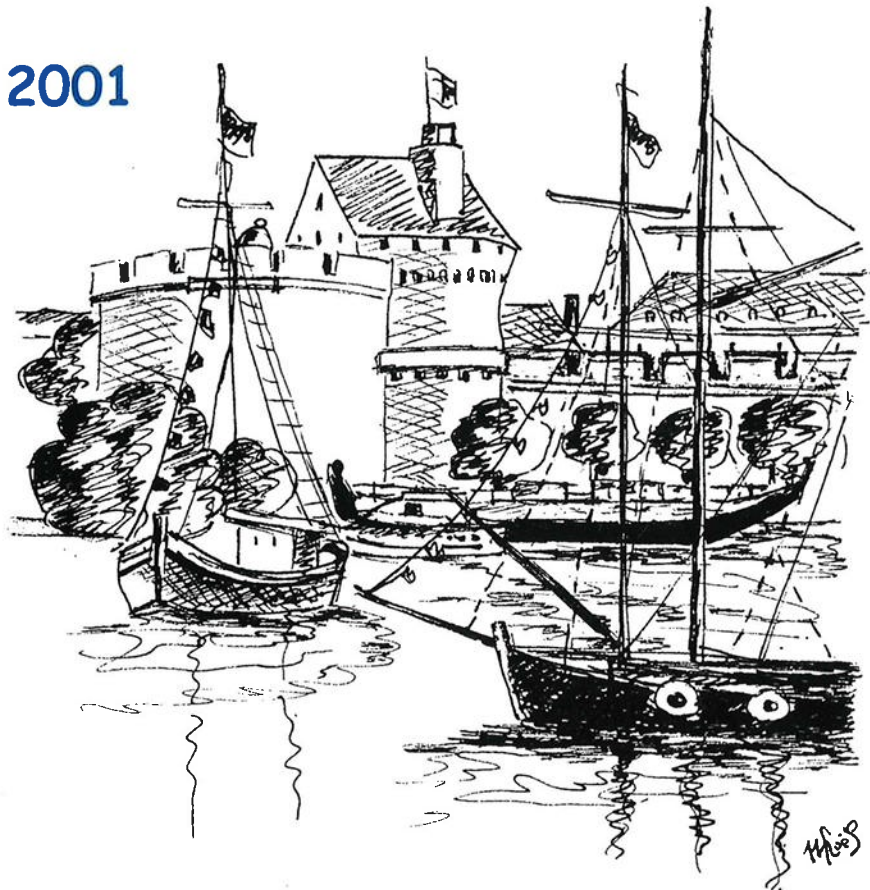


CENTRE NATIONAL
DE LA RECHERCHE
SCIENTIFIQUE

31^{èmes} JOURNÉES DES ACTINIDES

SAINT-MALO, FRANCE

26 - 28 April 2001



PROGRAMME AND ABSTRACTS



31^{èmes} Journées des Actinides, 26-28 April 2001, Saint-Malo

CONFERENCE ORGANIZATION

The Euroconference "*31^{èmes} Journées des Actinides*" is organized by the *Laboratoire de Chimie du Solide et Inorganique Moléculaire* (Institut de Chimie, UMR 6511 - CNRS - Université de Rennes 1 - France)

Organization Committee

H. Noël	(LCSIM Rennes)	Chairman
G. Lander	(ITU Karlsruhe)	
J-F. Halet	(LCSIM Rennes)	
M. Potel	(LCSIM Rennes)	
O. Tougait	(LCSIM Rennes)	

Scientific Committee

M. Almeida	(Lisboa, Portugal)
M. Genet	(Orsay, France)
G. Lander	(Karlsruhe, Germany)
H. Noël	(Rennes, France)
P. Oppeneer	(Dresden, Germany)
V. Sechovsky	(Prague, Czech Republic)
R. Troc	(Wroclaw, Poland)



31èmes Journées des Actinides, 26-28 April 2001, Saint-Malo

SUPPORTING ORGANIZATIONS

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Communauté Européenne

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ANDRA

(Agence Nationale pour la Gestion des Déchets Radioactifs)

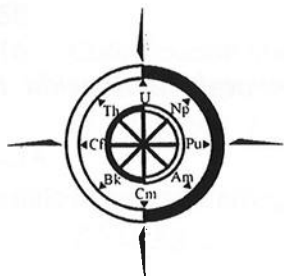
CNRS

(Centre National de la Recherche Scientifique)

Université de Rennes 1

Région Bretagne

Conseil Général d'Ille-et-Vilaine



31^{èmes} Journées des Actinides

PROGRAMME

WEDNESDAY, 25 April

16.00 - 21.00 Registration - Hotel France & Chateaubriand

19.30 - 21.30 Welcome Buffet - Hotel France & Chateaubriand

THURSDAY, 26 April

8.30 - 9.00 End of the Registration - Palais du Grand Large

9.00 Welcome address

SESSION I (O1 - O4)

Chairman : *G. Lander*

9.05

O1 Actinide compounds for nuclear waste transmutation
M. Beauvy, T. Duverneix, J.P. Ottaviani, Y. Croixmarie

9.30

O2 Physics of UCoAl in the light of pressure experiments
V. Sechovský, A.V. Andreev, Y. Ishii, M. Kosaka, Y. Uwatoko

9.55

O3 Magnetic susceptibility of NpPd₂Ge₂
E. Colineau, F. Wastin, P. Boulet, J. Rebizant

10.20

O4 Helical magnetic structures in relativistic systems revisited
L.M. Sandratskii

10.45 COFFEE BREAK

SESSION II (O5 - O8)

Chairman : *J. Ibers*

11.05

O5 Chemistry of some thorium and uranium phosphates, synthesis and characterization
V. Brandel, N. Dacheux, M. Genet

11.30

- O6 Preparation and physical properties of UFe_5Sn single crystals
A.P. Gonçalves, H. Noël, I. Catarino, G. Bonfait, J.C. Waerenborgh, M. Almeida, M. Godinho

11.55

- O7 Crystal structure of some uranyl vanadates built from Zig-Zag chains of edge-shared UO_7 bipyramids
S. Obbade, C. Dion, M. Saadi, F. Abraham

12.20

- O8 The U-Mo-Si System
P. Rogl, T. Le Bihan, H. Noël

12.45 LUNCH (Palais du Grand Large)

SESSION III (O9 - O13)

Chairman : *R. Troc*

14.00

- O9 Noncollinear magnetism on the UFe_5Al_7 compound
C. Cardoso, L. M. Sandratskii, T. Gasche, M. Godinho

14.25

- O10 Magnetic properties of the $NpGe_{2-x}$ binary phases
P. Boulet, E. Colineau, F. Wastin, J. Rebizant

14.50

- O11 Magnetic structure and local anisotropy of $U_3Al_2Si_3$ - A polarized neutron diffraction study
A. Gukasov, P. Rogl, M. Mihalik, H. Noël, A. Menovsky

15.15

- O12 Magnetism in $UPtAl$
P. Javorský, K. Prokeš, A.V. Andreev, V. Sechovský, M. Diviš, Y. Shiokawa

15.40

- O13 Spherical neutron polarimetry of the magnetic structure in UNi_2Al_3
A. Hiess, P. J. Brown, E. Lelievre-Berna, B. Roessli, N. Bernhoeft, G. H. Lander, N. Aso, N.K. Sato

16.05 - 19.00 COFFEE BREAK, POSTERS

19.30 DINNER (Palais du Grand Large)

FRIDAY, 27 April

SESSION IV (O14- O17)

Chairman : *J.C. Krupa*

9.00

- O14 Influence of inorganic complexing ligands on the retention of americium by clay minerals
D. Nolin, J. Ly

9.25

- O15 Speciation of $U(VI)$ at the zircon/water interface
C. Lomenech, R. Drot, J.-J. Ehrhardt, J. Mielczarski, E. Simoni

9.50

O16 Coordination chemistry of f elements related to the Actinide(III)/Lanthanide(III) separation process

M. Mazzanti, R. Wietzke, J.-M. Latour, L. Karmazin, J. Pecaut

10.15

O17 Fundamental studies of uranium and neptunium redox flow batteries

Y. Shiokawa, T. Yamamura

10.40 COFFEE BREAK

SESSION V (O18 - O21)

Chairman : *B. Cooper*

11.00

O18 Magnetic anisotropies in ferromagnetic $UP_{1-x}S_x$ single crystals

O. Vogt, K. Mattenberger

11.25

O19 The evolution of the ground state in the system US-LaS: Polarized neutron diffraction and X-ray magnetic circular dichroism study

A. Bombardi, N. Kernavanois, P. Dalmas de Réotier, G.H.Lander, J.P. Sanchez, A. Yaouanc, P. Burlet, E. Lelievre-Berna, A. Rogalev, O. Vogt, K. Mattenberger

11.50

O20 Revisiting the NpP magnetic properties

F. Wastin, E. Colineau, J. Rebizant, G.-H. Lander, F. Bourdarot, P. Burlet

12.15

O21 NpP studied by resonant X-ray scattering

M.J. Longfield, J.A. Paixão, N. Bernhoeft, F. Wastin, J. Rebizant, G.H. Lander

12.40 LUNCH (Palais du Grand Large)

SESSION VI (O22- O26)

Chairman : *M. Kuznietz*

14.00

O22 The magnetism of UPdSn probed by μ SR

G.M. Kalvius, D.R. Noakes, H. Nakotte, E. Schreier, R. Wäppling

14.25

O23 Bulk properties of UPtGe single crystal

R. Troc, T. Komatsubara, J. Stepien-Damm, C. Sulkowski

14.50

O24 Stability of the antiferromagnetic structure of UNiAl in magnetic fields

K. Prokeš, P. Javorský, A. Gukasov, E. Brück, V. Sechovský

15.15

O25 Magneto-crystalline anisotropy of URhAl, UPtAl and UCoAl from the first-principles

J. Kuneš, M. Diviš, P. Novák, P. M. Oppeneer

15.40

O26 Experimental evidence of the strong participation of relatively deep filled electronic shells (0-50 eV B.E.) in the chemical bond in uranium compounds.

Yu.A. Teterin

16.05 - 19.00 COFFEE BREAK - POSTERS

19.30 DINNER (Palais du Grand Large)

SATURDAY, 28 April

SESSION VII (O27 - O30)

Chairman : *P. Oppeneer*

9.00

O27 Crystal Field Levels Calculated by Means of Density Functional Theory
M. Colarieti-Tosti, O. Eriksson, L. Nordström, M.S.S. Brooks

9.25

O28 Resonant X-ray magnetic scattering from NP and U mixed oxide compounds
M.J. Longfield, N. Bernhoeft, J.A. Paixão, D. Mannix, R. Caciuffo, J. Rebizant, G.H. Lander

9.50

O29 Study of higher-oxide films of Th, U, and Pu
T. Gouder, L. Havela, F. Miserque, F. Wastin, J. Rebizant

10.15

O30 Spin waves in UO₂. Canonical variables approach
M.M. Larionov, Yu.G. Pashkevich, A.V. Yeremenko

10.40 COFFEE BREAK

SESSION VIII (O31- O34)

Chairman : *M. Almeida*

11.00

O31 High pressure studies of ThMn₁₂-type actinide compounds: UFe₅Al₇
I. Halevy, S. Salhov, G. Kimmel, U. Atzmony, L. C. J. Pereira, A. P. Gonçalves, W. Schäfer

11.25

O32 Self-consistent calculations of the order parameter in UPd₂Al₃
G. Varelogiannis, P.M. Oppeneer

11.50

O33 Density functional study of magnetism of URhSi and URhGe
M. Diviš, L. M. Sandratskii, M. Richter

12.15

O34 Magnetic features observed in (A,A')Ni₂B₂C solid solutions
M. Kuznietz, A.P. Gonçalves, M. Almeida

12.40 LUNCH (Palais du Grand large)

SESSION IX (O35 - O38)

Chairman : *G. M. Kalvius*

14.00

O35 Structural and microstructural characterization of uranium sputtered films
M.A. Rosa, A.P. Gonçalves, E. Alves, M.R. da Silva, M. Diego, O. Conde, M. Godinho, M. Almeida

14.25

O36 Photoelectron spectroscopy on Pu systems
T. Gouder, L. Havela, F. Wastin, J. Rebizant

14.50

O37 The electronic structure of δ -plutonium
P. Wachter

15.15

O38 Self-interaction-corrected calculation of the energetics of stabilization and density of the expanded-volume (δ) fcc phase of plutonium
B.R. Cooper, A. Setty, D.L. Price (deceased)

15.40

Conference summary

P. Rogl, V. Sechovsky

16.10

Presentation of the 32^{èmes} Journées des Actinides

16.20 OYSTER PARTY

17.00 FREE TIME

20.00 CONFERENCE DINNER (Palais du Grand Large)

POSTERS

THURSDAY, 26 April 16.05 - 19.00

Chairman: *D. Kaczorowski*

FRIDAY, 27 April 16.05 - 19.00

Chairman: *A.P. Gonçalves*

- P1 Determination of binary data of HMO_4 ($M = \text{Re}, \text{Tc}$)
L. Abiad, Ph. Moisy, P. Turq, P. Blanc
- P2 Some physical properties of sintered thorium phosphate-diphosphate
B. Chassigneux, N. Dacheux, V. Brandel, M. Genet
- P3 Kinetic study of crystallized ThO_2 and solid solutions $\text{Th}_{1-x}\text{U}_x\text{O}_2$ dissolution
G. Heisbourg, N. Dacheux, G. Lagarde, J. Ritt, S. Hubert
- P4 Structural studies of lanthanides(III) and uranium(III) complexes with N-donor and S-donor ligands: application to the selective extraction of actinides(III).
L. Karmazin, M. Mazzanti, C. Hill, J. Pécaut
- P5 Some new molybdates and tungstates of uranyl and alkali metals
S. Obbade, C. Dion, M. Saadi, F. Abraham
- P6 Synthesis, crystal structure and properties of neptunoyl picolinate dihydrate $[\text{NpO}_2(2\text{-C}_5\text{H}_4\text{NCOO})_2\text{H}_2\text{O}]$.
G.B. Andreev, J.-C. Krupa, M. Yu. Antipin, A.M. Fedosseev, N.A. Budantseva, A.G. Maslennikov, V.P. Perminov
- P7 Crystal structure of Np(V) complexes formed with 2,2',6',2''-terpyridine.
A. M. Fedosseev, G. B. Andreev, N. A. Budantseva, J. C. Krupa
- P8 Magnetic structure of U_5Sn_4
P. Boulet, H. Noël, G. André, F. Bourée
- P9 $\text{U}_2\text{Ni}_2\text{Sn}$ magnetic structure, a single crystal neutron diffraction study
F. Bourée, D. Laffargue, B. Chevalier, J.X. Boucherle, F. Bourdarot, P. Burlet, J. Rebizant, F. Wastin
- P10 Field-induced magnetic structures in UNiGe
K. Prokeš, H. Nakotte, E. Brück, P.F. de Châtel, V. Sechovský
- P11 Magnetic excitations in a new localised uranium system: $\text{U}_3\text{Pd}_{20}\text{Si}_6$
J. Allen, K. A. McEwen, N. Tateiwa, M. Koghi, K. Kuwahara, R. Bewley
- P12 Structural and electronic properties of U-N and Th-N films
T. Gouder, L. Havela, L. Blac, F. Miserque, F. Wastin, J. Rebizant

- P13 Electronic structure and crystal field of Actinide and Rare Earth cuprates
M. Diviš, V. Nekvasil, J. Kuriplach
- P14 Electronic structure of Pu-Ce and Pu-Am alloys stabilized in the δ phase.
M. Dormeval, N. Baclet, J.M. Fournier, F. Wastin, G. Lander, J. Rebizant
- P15 Influence of annealing treatment on gallium and cerium microsegregation in gallium-cerium-plutonium alloys by electron probe microanalyser.
O. Ast, P. Rofidal, O. Boiteux
- P16 The morphology and properties of the U_6Fe compound in (Ga stabilized) β -U alloys
M. Aizenshtein, U. Atzmony, D. Hamawi, G. Kimmel, A. Venkert, M.P. Dariel
- P17 Specific heat of the UFe_xAl_{12-x} family
I. Catarino, G. Bonfait, A.P. Gonçalves, M. Almeida, M. Godinho
- P18 High pressure resistive behaviour of NpTe
J.C. Griveau, V. Ichas, J. Rebizant, J.C. Spirlet
- P19 High pressure induced phase transition in AmTe
M. Idiri, S. Heathman, J. Rebizant
- P20 Occurrence of superconductivity in the series $UTGa_5$
A. Galatanu, S. Berger, E. Bauer, A. Grytsiv, P. Rogl
- P21 Single crystal study on $UCuSb_2$ and $UNiSb_2$
D. Kaczorowski, Z. Bukowski, R. Troc
- P22 Single Crystal Study On a Dense Kondo Compound UCu_5Al
V.H. Tran, R. Troc, F. Steglich, R. Hauser, E. Bauer, T. Komatsubara
- P23 Inversion of ferromagnetic planes in $U(Co_{0.05}Ni_{0.95})_2Si_2$ and $U(Ni_{0.95}Cu_{0.05})_2Si_2$
M. Kuznietz, E. N. Caspi, M. Melamud
- P24 Thermal-Expansion Studies of $U_{1-x}Th_xBe_{13}$ ($0 \leq x \leq 0.1$): Implications for the T-x Phase Diagram
N. Oeschler, F. Kromer, T. Tayama, M. Lang, P. Hinze, C. Langhammer, F. Steglich, J.S. Kim, G. R. Stewart
- P25 The XPS study of the An 5f states in light actinide compounds
Yu.A. Teterin, A.Yu. Teterin, A.M. Lebedev, I.O. Utkin, K. E. Ivanov
- P26 Magneto-optical spectroscopy of $U_{0.3}La_{0.7}S$
M. Broschwitz, J. Schoenes, O. Vogt, K. Mattenberger
- P27 High pressure structural behavior of the monosulfides of uranium and lanthanum
T. Le Bihan, A. Bombardi, M. Idiri, S. Heathman, A. Lindbaum

- P28 Crystal structure and magnetic behavior of the new binary uranium-nickel alloy
 $U_{11}Ni_{16}$
A. Perricone, M. Potel, H. Noël
- P29 Characterisation of new ternary uranium intermetallics: $U_3Ni_{12}X_4$ (X = Si, Ge)
A. Perricone, H. Noël
- P30 Crystal structure, magnetic and transport properties of $U_6Pt_{18}Ga_{11}$
J. Stepien-Damm, V. Zaremba, R. Troc
- P31 Crystal structure of $Th_3Ni_4In_{13}$ and $Th_4Pd_{10}In_{21}$
V. Zaremba, V. Hlukhyy, J. Stepien-Damm
- P32 Magnetic and electrical properties of the $UCu_{4-x}Cr_xAl_8$ system
W. Suski, K. Wochowski, D. Badurski
- P33 $U_3Te_5Ge_{0.7}$: a new U_3Te_5 modification showing interstitial sites
O. Tougait, M. Potel, H. Noël
- P34 Crystal structure and magnetic properties of new U_3S_5 type derivatives: ZrU_2S_5 and HfU_2S_5
A. Daoudi, H. Noël
- P35 Evidence for disorder in $UAsSe$: ^{77}Se and ^{75}As NMR study
T. Cichorek, R. Michalak, Z. Henkie, A. Wojakowski, F. Steglich
- P36 Low temperature specific heat of some uranium germanides and a new compound
 $U_6Pt_{18}Ga_{11}$
A.P. Pikul, A. Czopnik, H. Noël, R. Troc
- P37 Magnetotransport of the compounds in the U-Ge system
R. Troc, H. Noël, P. Boulet, V.H. Tran
- P38 Development of a sputtering system for the deposition of U-containing films
M. Diego, A.P. Gonçalves, M.R. da Silva, M.A. Rosa, M. Godinho, M. Almeida
- P39 Crystal structure, magnetism, superconductivity and heavy fermion behavior in the homologous series $M_mT_nT'_{3m+2n}$ (M = Ce, U; T = Co, Rh, Ir; T' = In, Ga)
E. G. Moshopoulou
- P40 Cocrystallization as method of physicochemical investigation of fundamental properties of Lanthanides and Actinides
S.A. Kulyukhin, N.B. Mikheev, A.N. Kamenskaya, I.A. Rumer, V.L. Novichenko
- P41 Sorption/desorption of plutonium and neptunium with clays
M.A. Vial, C. Sherman, K. R. Czerwinski
- P42 Les verres de SIALON pour cible de transmutation des Actinides
R. Daucé, P. verdier, J.C. Sangleboeuf, M. Beauvy, J.A. Odriozola, Y. Laurent

- P43 The oxidation state of uranium in USiAlON glasses
M.A. Centeno, P. Verdier, Y. Laurent, J.A. Odriozola
- P44 High pressure X-ray studies of the UCo_3B_2 compound and ambient magnetic properties by neutron diffraction
I. Halevy, E. Sterer, E. N. Caspi.
- P45 Magnetization studies on $\text{Pu}_x\text{U}_{1-x}\text{O}_2$ single crystals
D. Kolberg, F. Wastin, J. Rebizant, J. Schoenes
(post deadline)