

E. Colineau

ORGANIZING COMMITTEE

28^{èmes} Journées des Actinides

May 14-16, 1998, Uppsala, Sweden

Per Åberg per.berg@fysik.uu.se
Mike Brooks brooks@fysik.uu.se
Olle Eriksson olle.eriksson@fysik.uu.se
Peter James peter.james@fysik.uu.se
Börje Johansson borje.johansson@fysik.uu.se



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Department of Physics
Uppsala University

Program
and
Abstracts

ORGANIZING COMMITTEE

Per Andersson	per.andersson@fysik.uu.se
Mike Brooks	brooks@itu.fzk.de
Olle Eriksson	olle.eriksson@fysik.uu.se
Peter James	peter.james@fysik.uu.se
Börje Johansson	borje.johansson@fysik.uu.se

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General Information

Oral Communications

All speakers are requested to perform their presentation within the arranged time including 3 minutes of discussion and questions

Posters

The poster session will be located at the top floor of the university building. Posters should be mounted on Friday 15/5 between 16.00 and 17.00 and be removed before the following morning session.

Scientific Program

Journées des Actinides: Program

14-16 May 1998, University Building, Uppsala

Thursday 14 May, 1998

13.00 Welcome Address

Actinide Elements and Structure

Chairman: Börje Johansson

13.10 Per Söderlind

Phase transitions in f-electron metals from first principles theory

13.30 Jagan Akella, Sam.T.Weir, Chantel Ruddle, M.S.Somayazulu and Y.Ma
Uranium Revisited

13.50 O.Eriksson and J.M.Wills

Novel electronic configuration in δ -Pu

14.10 J.C.Lashley

Progress on the preparation of gallium stabilized δ -Pu

14.30 A.C.Lawson, B.Cort, J.A.Roberts, J.W.Richardson Jr.

Debye-Waller factors and thermal vibrations of the light actinides

14.50 L. Fast, L. Nordström, B. Johansson, J. M. Wills and O. Eriksson

Theory of the charge density wave in α -uranium

15.10 Session Discussion

15.20 Coffee

Intermetallics I

Chairman: Vladimir Sechovsky

15.50 N.Bernhoeft, N.Sato, B.Roessli, N.Aso, A.Hiess, G.H.Lander,
Y.Endoh and T.Komatsubara

Superconductivity and magnetism in UPd_2Al_3 - new results

Friday 15 May, 1998

Intermetallics II

Chairman: Robert Troc

- 09.00 *K.Prokes, P.Javorsky, M.Olsovec, V.Sechovsky, F.Bourdarot, P.Burlet, A.Gukasov, M.Mihalik and A.A.Menovsky*
Magnetic structures in UNiAl under magnetic fields
- 09.20 **L.Sandratskii**
Magnetic structure of selected UTX compounds
- 09.40 **J.Schoenes, U.Barkow, M.Broschwitz, J.Lammers, K.Litfin, R.Schulz, D.Kaczorowski, B.Becker, A.Menovsky and N.Patil**
Ellipsometry with synchrotron radiation on UGa₃ and URu₂Si₂
- 10.00 **S.M.Butorin**
Resonant inelastic soft X-ray scattering from lanthanide and actinide compounds
- 10.20 **E.Lidström, A.Hiess, M.Longfield, D.Mannix, G.Lander, F.Wastin, J.Rebizant and C.Vettier**
Element specific magnetism in $U_{1-x}Np_xRu_2Si_2$
- 10.40 *Session Discussion*
- 10.50 *Coffee*

Nuclear Fuels and Storage

Chairman: Lars Werme

- 11.20 **R.K.Singhal and J.P.Schapira**
Front end radiological hazards associated with thorium and uranium processing for use as a nuclear fuel
- 11.40 **D.Leroy, L.Martinot, C.Jerome and R.Jerome**
Study of the complexation of actinide and lanthanide ions by polymeric systems prepared by electrochemical processes
- 12.00 **P.A.Korzhavyi, I.A.Abrikosov and B.Johansson**
Theoretical investigation of the defect interactions in dilute copper alloys intended for nuclear waste containers
- 12.20 *Session Discussion*
- 12.30 *Lunch*

Electron Correlation in Actinides

Chairman: Patrizia Monachesi

14.00 **J.D.Thompson** and *M.F.Hundley*

Are there lessons to be learned from Ce and U heavy-electron materials?

14.20 **R.A.Robinson**

Similarities and differences between $4f$ and $5f$ heavy fermions

14.40 **L.Havela**, *A.V.Kolomiets*, *A.V.Andreev* and *V.Sechovsky*

A non-fermi liquid behaviour of the band metamagnet of UCoAl

15.00 **M.Richter**, *J.Forstreuter*, *Z.Liu*, *M.Divic*, *L.Steinbeck* and *H.Eshrig*

Self-interaction corrected density functional theory for $4f$ and $5f$ systems:
atoms, ions and intermetallic compounds

15.20 *Coffee*

15.50 **B.R.Cooper** and *Y.-L. Lin*

Two kinds of actinide correlated f -electron-band-electron states and the consequences
for ordered moment collapse with alloying

16.10 **I.Sandalov**, *B.Johansson* and *O.Eriksson*

Beyond LDA: regular perturbation theory from the atomic limit for $f(d)$ -electrons

16.30 *Session Discussion*

17.00-20.00 **Poster Session**

Chairmen: Lars Nordström and Lars Fast

Saturday 16 May, 1998

Actinide Chemistry

Chairman: H. Noel

- 09.00 **U.Wahlgren**
Theoretical calculations on uranyl complexes
- 09.20 **M.Beauvy, D.Bonifay, J.P.Alessandri and T.Gervais**
New investigation on crystal chemistry of $(U_xPu_{1-x})O_2$
- 09.40 **A.K.Pikaev, V.P.Shilov and A.V.Gogolev**
The study on formation of Np(V) peroxo complex upon radiation-induced and chemical reduction of Np(VI) by hydrogen peroxide
- 10.00 **I.A.Charushnikova, N.N.Krot and Z.A.Starikova**
Crystal structures and electron absorption spectra of Neptunium (IV) sulfates
- 10.20 *Coffee*
- 10.50 **R.Klenze, K.H.Chung, P.Paviet-Hartman, J.I.Kim**
Sorption of Cm(III) on silica studied by time-resolved laser fluorescence spectroscopy
- 11.10 **W.B.Holzappel and Th. Tröster**
Crystal fields of U^{3+} : $LaCl_3$ under pressure
- 11.30 *Session Discussion*
- 12.00 *Lunch*

NaCl-type Actinide Compounds I

Chairman: G.H. Lander

- 13.30 **O.Vogt, J.Lohle, and K.Mattenberger**
High-temperature susceptibilities of actinide mononictides and monochalcogenides
- 13.50 **R.Ahuja, S.Auluck, O.Eriksson, M.S.S.Brooks and B.Johansson**
Fermi surface of uranium carbide
- 14.10 **V.Ichas, J.Rebizant, and J.C.Spirlet**
Pressure effects on the resistivity of PuTe
- 14.30 **P.Oppeneer, M.S.S.Brooks, and T.Kraft**
Electronic structure investigation of the plutonium monochalcogenides

14.50 *Session Discussion*

15.00 *Coffee*

NaCl-type Actinide Compounds II

Chairman: Manuel Richter

15.30 **P.Wachter** and *J.Rebizant*

The electronic structure of NpTe and AmTe

15.50 **P. Ravindran**, *O.Eriksson* and *B.Johansson*

Magnetic, optical and magneto-optical properties of uranium monochalcogenides

16.10 **M.S.S.Brooks**

Calculated X-ray magnetic circular dichroism of uranium sulphide

16.30 *Session Discussion*

16.40 **Conference Summary**

R.A. Robinson and **P.M. Oppeneer**

18.30

Conference Dinner

JdA Poster Session

15 May, 1998

chairman: Lars Nordström and Lars Fast

- P1. E. Colineau, F. Wastin and E.J. Higgins
Magnetism of $U_4(Ru_{1-x}Os_x)_7Ge_6$ Solid Solution.
- P2. E. Colineau, F. Wastin and J. Rebizant
Mössbauer Investigations on Np_2Ir_2In .
- P3. E. Cordruwisch, H. Noel, P. Boulet and P. Rogl
Constitution, Structural Chemistry and Magnetism of the Ternary System U-Au-Al.
- P4. N. Dacheux and J. Aupiais
Study of Americium and Curium Measurement by Alpha Liquid Scintillation with Rejection of $\beta - \gamma$ Emitters.
- P5. S. Demuyne, S. Cottenier, J. Spirlet and M. Rots
The Magnetic Structure of UPb_3 Studied by Perturbed Angular Correlations Spectroscopy.
- P6. A.Yu. Garnov, A.B. Yusov, V.P. Shilov and N.N. Krot
Oxidation Reactions of Np(IV) and Pu(IV) in Alkaline Solutions.
- P7. A.P. Gonçalves, V. Cachata and J.P. Leal
Standard Enthalpies of Formation of Uranium Intermetallic Compounds Determined by the Solution-calorimetric Method.
- P8. A.P. Gonçalves, J.C. Waerenborgh, S. Serio, M. Godinho and M. Almeida
 UFe_4Al_8 : Effects of Interstitials and Ga Substitution.
- P9. G.E. Grechnev, A. Delin, O. Eriksson, B. Johansson and J.M. Wills
Magnetovolume Effect in UX_3 Compounds.
- P10. J.-C. Griveau, D. Braithwaite, J. Thomasson, C. Geibel, W. Assmuss and J. Flouquet
Heavy Fermion Superconductors UPd_2Al_3 and $CeCu_2Si_2$ Under High Pressure.
- P11. A. Gukasov, P. Wisniewski and Z. Henkie
Neutron Scattering Study of Non-collinearity in U_3As_4 and U_3P_4 .
- P12. I.H. Hagemus, E. Brück, J.C.P. Klaasse, K. Prokeš and F.R. de Boer
Heat Capacity of $UNiAl$ in the Vicinity of the Metamagnetic Transition.
- P13. P. Javorsky, F. Wastin, L. Havela, J.C. Griveau, E. Bednarczyk and J. Rebizant
Magnetic Properties of $NpNiSn$ and $NpIrSn$.

- P14. **D. Kaczorowski**, *R. Troc, V.I. Zaremba, A. Jezowski, B. Andraka and R. Pietri*
Magnetic, Transport and Thermal Properties of a Novel Uranium
Intermetallic Compound UCu_5In .
- P15. **T. Le Bihan**, *M. Mezouar and M. Idiri*
Different Possibilities of Studies of Actinides at High Pressure and/or
High Temperature at the ESRF.
- P16. **E.M. Levin**, *R. Troc, V.H. Tran and T. Palewski*
Magnetoresistance of $UCoAl$ and $UFeAl$ Intermetallics.
- P17. **U. Lundin**, *I. Sandalov and O. Eriksson*
Aspects of De-localization, Mixing and Correlations in *f*-electron Systems.
- P18. **Y. Meresse**, *S. Heatman, T. Le Bihan, S. Darracq, J. Rebizant,
J.C. Spirlet and U. Benedict*
X-ray Diffraction Studies of Neptunium Compounds Under High Pressure.
- P19. **P. Monachesi**, *A. Continenza, M.S.S. Brooks and M. Grioni*
Electronic Properties of URu_2Si_2 and $URhSi$.
- P20. **M. Olšovec**
Electronic Structure and Magnetisation Densities of $UNiGa$ and $UNiAl$.
- P21. **R.A. Robinson**, *N.R. Dilley, M.B. Maple, H. Nakotte, J.W. Lynn and S. Skanthakumar*
Martensitic and Magnetic Phase Transitions in UPd_2Pb .
- P22. **P.S. Salamakha**
X-ray Investigations into the $USi_2-NdSi_2-NdAu_2-UAu_2$ System.
- P23. **B. Siberchicot**
Band Theoretical Investigations of the Ferromagnetic Hydride $\alpha-UH_3$.
- P24. **O.L. Sologub**, *P.S. Salamakha and H. Lueken*
New Representatives of the $Y_3Au_3Sb_4$ Type Structure.
- P25. *P. Söderlind*, **R. Ahuja**, *O. Eriksson, B. Johansson and J.M. Wills*
De-localization and Prediction of a new Phase in Americium: Theory.
- P26. **V.H. Tran**, *R. Troc, R. Pietri and B. Andraka*
The Heavy Fermion Behaviour of a Ferrimagnet UCu_5Sn .
- P27. **K. Wochowski** and *W. Suski*
Physical Properties of the $UMn_{4-x}Fe_xAl_8$ Alloys for Low Fe Concentration.