



PSI, Villigen
January, 2002

**MINUTES "BESCHLUSSKONFERENZ"
OF THE USERS MEETING BV 33 AT PSI
January 8/9, 2002**

present: Dr. S. Adam
Dr. K. Gabathuler
Dr. D. Herlach
Prof. H. Keller
Dr. E. Pedroni
Dr. C. Petitjean (Secretary, Chair i. A.)
Dr. R. Rosenfelder
Dr. L. Simons
Dr. E. Steiner

excused: Prof. R. Eichler (Chairman)
Dr. W. Fischer
Dr. G. Goitein
Dr. C. Hoffman
Dr. P.A. Schmelzbach

1. Approval of Experiments

The recommendations of the BVR research committee and the μ SR research committee are acknowledged (see minutes).

New Proposals

- R-02-01.1 Pion-Nucleus Scattering at Low Energies
E. Friedman et al., Jerusalem, Tübingen
Approved with moderate priority, 4 weeks π E3 with LEPS.
- R-02-02.1 Partial muon capture rates for double beta decay
V. Egorov et al., Dubna, Orsay, Louvain, Caen, PSI, Jyväskylä
Approved with moderate priority, 4 weeks μ E4.
- RA-02-01.1 μ SR investigations of Fe_3O_4 and CoFe_2O_4
M. Balasoiu et al., JINR, Cluj-Mapoca, Timisoara, ETHZ
Approved for feasibility test.
- RA-02-02.1 Pure Magnetic Quantum Tunneling
A. Keren et al., Haifa, Kyoto.
Approved.
- RA-02-03.1 Frustration driven lattice distortion
A. Keren et al., Haifa, NRC Canada
Approved.
- RA-02-04.1 Search for Novel Quantum Critical Behaviour in the Frustrated Pyrochlores
 $\text{Er}_2\text{Ti}_2\text{O}_7$ and $\text{Er}_2\text{SbGaO}_7$
J. Lago et al., London, NRC Canada, Los Alamos, Oxford
Approved for feasibility test.
- RA-02-05.1 Dynamic Scaling in Novel Magnetic Materials
R. Heffner et al., Los Alamos, Riverside, California, Leiden
Approved.
- RA-02-06.1 μ SR studies of the frustrated quantum magnet Cs_2CuCl_4
S. Blundell et al., Oxford, ISIS
Approved for feasibility test.
- RA-02-07.1 μ SR studies on the weakly coupled spin tetrahedra systems $\text{Cu}_2\text{Te}_2\text{O}_5\text{Br}_2$
and $\text{Cu}_2\text{Te}_2\text{O}_5\text{Cl}_2$
H.-H. Klauss et al., Braunschweig, Stockholm
Approved.
- RA-02-08.1 The magnetic instability of the $\text{CeRu}_2(\text{Ge},\text{Si})_2$ -system, as studied by muon spectroscopy under pressure
S. Süllow et al., Braunschweig, Southampton
Approved.

- RA-02-09.1 Study of the Cr⁵⁺ magnetic ordering in RCrO₄ oxides (R = Y and Er)
P. Gubbens et al., IRI Delft, Madrid, CEA Grenoble
Approved.
- RA-02-10.1 Local Magnetic field and muon localization in strongly correlated magnetic metallic systems
P. Gubbens et al., IRI Delft, CEA Grenoble, Amsterdam, PSI
Approved with the invitation to finish the topic.
- RA-02-11.1 High pressure investigation of the ferromagnet Uge₂
P. Dalmas de Réotier et al., CEA Grenoble, IRI Delft, ETHZ, Amsterdam
Approved.
- RA-02-12.1 Magnetic order in single-crystalline CeCu₂(Si_{1-x}Ge_x)₂
O. Stockert et al., MPI Dresden Cluj-Mapoca, PSI
Approved for feasibility test.
- RA-02-13.1 Study of the magnetic phase transitions in La_{1-x}Sr_xCoO₃ (0 ≤ x ≤ 5), by probing the local magnetic interactions using Muon Spin Resonance
I. Terry et al., Durham, Minnesota
Approved for feasibility test.
- RA-02-14.1 Magnetic Phenomena and Isotope Effects in Cuprates
A. Shengelaya, ETHZ, PSI, Belgrade
Approved.
- RA-02-15.1 μSR study of the Magnetic Phase Diagram of Excess-Oxygen-Doped La_{1.8}Nd_{0.2}Cu_{1-y}Zn_yO_{4+δ}
I. Watanabe et al., RIKEN, Tohoku University, ISIS
Approved with the invitation to use the DOLLY instrument.
- RA-02-16.1 Pseudogap and magnetic correlations in heavily Zn- and Ni- substituted Yba₂Cu₃O_{7-d} single crystals
C. Bernhard et al., MPI Stuttgart, Konstanz, Warsaw, Karlsruhe
Approved.
- RA-02-17.1 μSR Studies of MgB₂-based Superconductors
K. Prassides et al., Sussex, ETHZ, PSI
Approved.
- RA-02-18.1 The novel superconductor MgB₂: Anisotropy and pairbreaking effects from London penetration in pure and derivated compounds
R. De Renzi et al., Parma, Genova, Konstanz, MPI Stuttgart
Approved with priority.
- RA-02-19.1 The Flux Line Lattice in the Ferromagnetic Superconductor ZrZn₂
S. Lee et al., St. Andrews, Bristol, Birmingham
Approved.

- RA-02-20.1 μ SR in organic semiconductors. A microscopic approach to the doping problem
A. Weidinger et al., Berlin, Coimbra, ISIS
Approved.
- RA-02-21.1 Quantum diffusion of isotropic muonium in an isotopically pure ^{13}C diamond
I. Machi et al., South Africa, Witwatersrand,
Conditional approval. The authors are invited to seek collaboration.
- RA-02-22.1 In-situ MuSR study of hydrogen absorption by alkali-intercalated graphite
E. Gray et al., Brisbane
Conditional approval. The authors are invited to seek collaboration.
- RA-02-23.1 Muon spectroscopy on Zircaloy corrosion layer
C. Degueldre et al., PSI
Approved.
- RA-02-24.1 Reaction of Muonium with Molecular Oxygen in Liquid Nitrogen
H. Dilger et al., Stuttgart,
Approved.
- Comment: The allocation of beam time to the RA-Proposals will depend on the possibilities of distribution between the GPS and DOLLY instruments, which are currently being investigated.

Addenda

The following addenda to the proposals for an ultracold neutron source (UCN) are acknowledged, see comments and recommendations in the BVR minutes:

- R-00-03.3 Proposal to demonstrate long UCN storage times in a large-volume Be-coated vessel
M. Daum et al., PSI, Gatchina, Grenoble
- R-00-03.4 Proposal for an early demonstration of the functioning of a fast kicker magnet for the 590 MeV proton beam to the UCN target
U. Rohrer et al., PSI
- R-00-05.2 Proposal for a test experiment to measure the magnetic shielding and the stabilization of resonance conditions in an EDM spectrometer
A. Serebrov et al., Gatchina, St. Petersburg, PSI, Grenoble

These addenda are considered to be important steps toward the approval and construction of the UCN source. It is expected that first tests of a beam kicker for the UCN source can be made in the course of accelerator development shifts during late 2002.

Letter of Intent

R-02-03.0 An International Muon Ionization Cooling Experiment (MICE)
 A. Blondel, Geneva, European Spokesperson
 D. Kaplan, IIT, US Spokesperson
 The letter is acknowledged.

The concerns voiced by the BVR Committee about possible impacts on the present and future research program at PSI should be carefully considered in planning the next steps, see BVR minutes.

2. Beam schedules, Target E, LEPS

The 600 MeV ring accelerator is scheduled for 36 weeks of high intensity beam production from April 18 to December 23, 2002 (see beam schedule in the appendix). The first 8 weeks until June 12, 2002 are with the long production target E ($l = 6$ cm), after that date the short target will be used ($l = 4$ cm). Users who want to request in the future the long production target E, should do this well in advance of our shutdown planning, e.g. in summer 2002 for periods in 2003.

For the first time, the μ SR community will try to use the π E1 area employing the DOLLY facility with a spin rotator.

2002 is the last year to use the low energy spectrometer LEPS in area π E3. After that it will be disposed.

As usual, the schedule will be regularly updated and displayed on the internet (<http://ltp.web.psi.ch/schedule.pdf>)

3. Acknowledgements

With this meeting Prof. Peter Truöl retired from his activity in the BVR research committee. With applause he was thanked for his long term engagement for the particle physics at PSI.

At the BVRA 2001 Prof. Föhnle finished his term in the BVRA committee. We thank him very much for his engagement.

The BVRA committee welcomes Prof. De Renzi as a new member who participated for the first time.

4. Varia

The next meeting BV 34 is scheduled for February 4/5, 2003. The **deadline** for beam requests, new proposals and addenda is **December 13, 2002**.

Attachments

- PSI 590 MeV Program April – December 2002
- BV33 list of PSI HE experiments
- the recommendations of the scientific committees can be found on the internet:
<http://www.ltp.web.psi.ch/bvr.html>

PSI 590 MeV Program April – December 2002

Number of week		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
Date of Monday		15.4	22.4	29.4	6.5.	13.5	20.5	27.5	3.6	10.6	17.6	24.6	1.7	8.7	15.7	22.7	29.7	5.8	12.8	19.8	
590 MeV accelerator, Injector II																					
Lambshift																					
Target E 6 cm																					
Area	Proposal	Spokesman	Experiment																		
πM 1		Renker	Detector-Tests																		
	R-99-06	Kirkby/Pohl	Fast mu - lifet.																		
		Zanello	Tests																		
		Robmann	Tests KOPIO																		
πM 3	RA	Herlach (coord)	RA-Program																		
πE 1	R-89-01	Gabathuler	π -Irradiation																		
		Daum	Praktika LFHA																		
	RA	Herlach	RA-Program																		
πE 3	slow mu+ fa	Morenzoni	slow mu+ exp.																		
	RA-program	Herlach (coord)	μ SR																		
	R-99-07	Hertzog	μ lifetime																		
	R-00-01	Friedman	π N at L.E.																		
	R-02-01	Friedman	π p-CEX																		
	R-00-04	Föhl	B II DCX																		
	Separator 2																				
πE 5	R-98-01	Gotta	π Hydrogen																		
	R-98-03	Kottmann	μ H																		
	R-99-05	Mori	μ e γ																		
μE 1	RA	RA-program	μ SR																		
μE 4	R-97-03	Egorov	Doppler broad.																		
	R-02-02	Egorov	Part. μ Cap.																		
		Grab	Praktikum ETH																		
	R-97-05	Kammel/Petitjean	μ p Capture																		
		Mülhauser	tests Xenon det.																		
NA 2	R-89-08	Hajdas/Zehnder	PIF																		
		Victoria	PIREX																		
NA 3		Pedroni-Goitein	p-Therapy																		
			Special exp / Dosimetry																		
SINQ	R-96-04	Bodek	Time rev viol (n-decay)																		
NA Area		For Details see weekly program																			

PSI 590 MeV Program April – December 2002

Number of week				35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
Date of Monday				26.8	2.9	9.9	16.9	23.9	30.9	7.10	14.10	21.10	28.10	4.11	11.11	18.11	25.11	2.12	9.12	16.12
590 MeV accelerator, Injector II																				
Lambshift																				
Target E 4 cm																				
Area	Proposal	Spokesman	Experiment																	
πM1		Renker	Detector-Tests																	
	R-99-06	Kirkby/Pohl	Fast mu - lifet.																	
		Zanello	Tests																	
		Robmann	Tests KOPIO																	
πM3	RA	Herlach (coord)	RA-Program																	
πE1	R-89-01	Gabathuler	π-Irradiation																	
		Daum	Praktika LFHA																	
	RA	Herlach	RA-Program																	
			DOLLY																	
			DOLLY																	
πE3	slow mu+ fac	Morenzoni	slow mu+ exp.																	
	RA-program	Herlach (coord)	μSR																	
	R-99-07	Hertzog	μ lifetime																	
	R-00-01	Friedman	π N at L.E.																	
	R-02-01	Friedman	π p-CEX																	
	R-00-04	Föhl	B II DCX																	
	Separator 2																			
			LEPS																	
			LEPS																	
πE5	R-98-01	Gotta	π Hydrogen																	
	R-98-03	Kotmann	μ H																	
	R-99-05	Mori	μ e γ																	
μE1	RA	RA-program	μSR																	
μE4	R-97-03	Egorov	Doppler broad.																	
	R-02-02	Egorov	Part. MuCap.																	
		Grab	Praktikum ETH																	
	R-97-05	Kammel/Petitjean	μp Capture																	
		Mulhauser	tests Xenon det.																	
			setup																	
NA2	R-89-08	Hajdas/Zehnder	PIF																	
		Victoria	PIREX																	
NA3		Pedroni-Goitein	p-Therapy																	
			Special exp./Dosimetry																	
SINQ	R-96-04	Bodek	Time rev viol (n-decay)																	

NA Areas For Details see weekly program

BV 33 LIST OF PSI HE EXPERIMENTS: BEAM REQUESTS AND ALLOCATIONS 2002 (APRIL 18 - DEC. 23, 2002)

03.04.01/VA14/list01

AREA	PROPOSAL	SPOKESPERSONS	EXPERIMENT	BEAM STATUS (1 Week = 5 Real Days)			BEAMTIME 2002		
				Used	Allocation	Ref.	Request	Remarks	Allocation
π M1	R-99-06 R-99-05 Tests Tests Tests	KIRKBY, POHL MORI ROBMANN ZANELLO RENKER	μ^+ lifetime with FAST $\mu \rightarrow e + \gamma$ KOPIO Experiment Agile Experiment Crystal and other tests	2 W(T)	appr. (see π E5)	BV30	3 W(T) 3 W(T) 2 W(T) 2 W(T)	June open April April	3 W 2 W 2 W 28 W
π M3	RA-Props.	(HERLACH, Coord.)	μ SR, GPS + LTF			(see BVRA)	56 W (GPS + LTF)		36 W
π E1	RA_Props. Praktikum Tests	(HERLACH, Coord.) DAUM, KUEHNE GABATHULER	μ SR with DOLLY Praktikum LFHA Irradiations with π			(see BVRA) appr. appr.	20 W (DOLLY) 3 W(T) June 6 W(T) April/June		20 W 4 W 12 W
π E3	slow μ^+ R-99-07 R-00-01 R-00-04 R-02-01 RA-Props.	MORENZONI HERTZOG, CAREY FRIEDMAN FOEHL FRIEDMAN (HERLACH, Coord.)	slow μ^+ facility MULAN Det./Beam Tests π^-p total CEX (LEPS) DCX on ^{11}B (LEPS) πN -scat.. at low Energies (LEPS) μ SR (ALC-Expts./Dolly)	50 W 2 W(T) 4 W(T)	appr. appr. appr. appr. appr.	BV19 BV29 BV30 BV30 BV33 (see BVRA)	8 W(Sep) long target E 3 W(Sep) July 3-24 3 W(Sep) April 3 W LEPS September 4 W LEPS September 6 W (ALC)	8 W(long E) 3 W 3 W 3 W 4 W 10 W	
π E5	R-98-01 R-98-03 R-99-05	GOTTA KOTTMANN MORI	π Hydrogen Lamb Shift in $\mu\text{H}(2s-2p)$ $\mu \rightarrow e + \gamma$ (tests)	13 W 4 W 5 W(T)	appr. appr. Tests appr.	BV27 BV31 BV29	8 W + 2 W(T) long target E 8 W + 2 T July/August 8 W(T) July/October	10W(long E) 10 W 8 W	
μ E1	RA-Props.	(HERLACH, Coord.)	μ SR			(see BVRA)	16 W (GPD)		35 W
μ E4	Praktikum R-97-03 R-97-05 R-02-02	GRAB et al. EGOROV KAMMEL/PETITJEAN EGOROV	Praktikum Particle Physics ETH Doppler Broadening in μ -capture μp singlet capture Partial μ -capture rates	3 W(T) 18 W(T)	appr. appr. appr. appr.	BV25 BV32 BV33	5 W 11.-26.7, 26.9-11.10 4 W May 12 W + 6 W(T) April/July/Oct.-Dec 4 W May-June	6 W 4 W 18 W 4 W	
NA Areas (split-p beam)	R-89-08 PIREX NA3	ZEHNDER/HAJDAS VICTORIA PEDRONI/MUNKEL	PIF (Proton Irrad. Facility) Materials Science p-Therapy (GANTRY), Dosimetry Special exp. and dosimetry		appr. appr. appr.	BV14 FOKO FOKO	8-16 WE (or 8 W in NEB area) (paras.) 25 WE April- October 4x17.5 h/week + last 4 Saturdays 5 WE	25 WE OK OK	
SINQ "FUNSPIN"	R-96-04	BODEK	Time reversal viol. in n-decay	20 W	appr.	BV32	20 W March-May/August Sept./November-December.		20 W