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M-95

Muon Catalyzed Fusion and Related Topics

C346.36/M-95

μ CF-life

Joint Institute for Nuclear Research

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Muon physics is one of the essential topics in JINR science ever since the Institute foundation in 1956. In the early 1960s V. P. Dzhelepov stimulated the research on muonic atoms and molecules, which resulted in the observation of the muon catalysis phenomenon in pure deuterium and the discovery of $d\mu d$ molecule resonant formation in 1967. A group of young theoreticians, which came forward at JINR at that time, developed a detailed picture of muon atomic and molecular physics and predicted a high efficiency of the muon catalyzed fusion (μ CF) in the deuterium–tritium mixture in 1977. Next year this theoretical prediction was confirmed experimentally at the JINR Laboratory of Nuclear Problems (now Dzhelepov LNP). Since then the μ CF research spread over the world and the international μ CF community emerged.

The flashbacks of this community are collected in this photo-digest. Many pictures were delivered by Yuri Tumanov, who fixed with his camera the professional and social life of scientists during 45 years.



Venedict Petrovich Dzhelepov



Synchrocyclotron of the Dzhelepov Laboratory of Nuclear Problems, JINR, Dubna



μ CF experimental installation at the Laboratory of Nuclear Problems (LNP), JINR, Dubna, 1988. Left to right: V. P. Dzhelepov, V. A. Stolupin, J. S. Cohen, V. V. Filchenkov, M. Danos, S. E. Jones, L. Marcziš, D. G. Merkulov, V. G. Zinov



Valentin Grigorievich Zinov



Valentin Ivanovich Petrukhin



V. P. Dzhelepov's office at the Laboratory of Nuclear Problems, JINR, Dubna, 1977.
Left to right, seated: R. A. Eramzhan, A. Vitale, A. Bertin, A. I. Rudenko, L. I. Ponomarev;
standing: V. V. Filchenkov, L. N. Somov, M. P. Faifman, V. M. Bystritsky



Laboratory of Theoretical Physics (LTP), JINR, Dubna, 1977.
Left to right: D. I. Blokhintsev, L. I. Ponomarev, S. I. Vinitzky



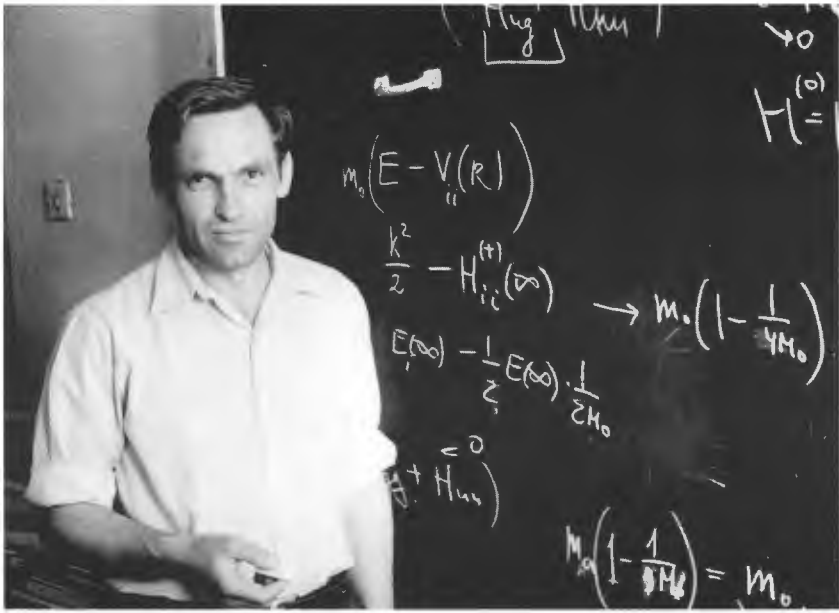
I International Symposium «Mesons in Matter», Dubna, June 7–10, 1977.
Main entrance to the building of LTP.
Left to right: I. I. Gurevich, L. I. Ponomarev, S. S. Gershtein



LTP, JINR, Dubna, 1978. Left to right: S. I. Vinitsky, N. C. Mukhopadhyay, L. Gr. Ixaru, F. Vucailovic, L. I. Ponomarev



Moscow, 1977. G. Fiorentini (left) and F. Kottmann



LTP, JINR, Dubna, 1977. L. I. Ponomarev



Dubna, 1982. Left to right: S. I. Vinitzky, V. S. Melezhhik, M. P. Faifman, M. S. Kaschiev



Dubna, 1983. Left to right: L. I. Ponomarev, S. I. Vinitzky, L. I. Menshikov, V. S. Melezhik, M. P. Faifman



LTP, JINR, Dubna, 1985. V. M. Suvorov (left) and M. Leon



LTP, JINR, Dubna, 1986. Left to right, standing: J. Wozniak, V. I. Korobov, M. P. Faifman, L. I. Menshikov, F. Vucailovic, L. I. Ponomarev, I. V. Puzynin, T. P. Puzynina, T. A. Strizh; seated: V. S. Melezhik, S. I. Vinitsky, D. Bakalov



International Symposium on Muon Catalyzed Fusion (μ CF-86),
Tokyo, Japan, September 1-6, 1986



II International Symposium «Muons and Pions in Matter», Dubna, June 30 – July 4, 1987.

Main entrance to the building of LNP, JINR.

Left to right: V. E. Markushin, F. Kottmann, L. N. Somov, L. P. Sukhanov, L. I. Ponomarev,
V. M. Bystritsky, N. P. Popov, V. P. Popov, A. V. Kravtsov, L. Bracci, Yu. V. Petrov,
M. P. Faifman, V. S. Melezhik, G. Ya. Korenman, D. Bakalov



II International Symposium «Muons and Pions in Matter», Dubna, June 30 – July 4, 1987.

Left to right: L. I. Ponomarev, K. M. Crowe, V. G. Zinov, H. Daniel, V. S. Melezhik



II International Symposium «Muons and Pions in Matter», Dubna, June 30 – July 4, 1987.
At a conference dinner (left to right): E. Zavattini, L. I. Ponomarev,
F. J. Hartmann, V. E. Markushin



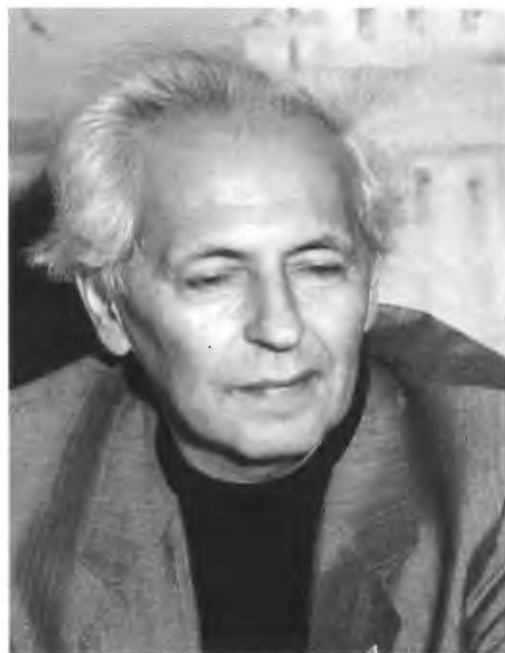
II International Symposium «Muons and Pions in Matter», Dubna, June 30 – July 4, 1987.
At a conference dinner (left to right): F. J. Hartmann, L. I. Ponomarev, K. Nagamine,
K. M. Crowe, J. N. Bradbury, L. N. Somov, F. Kottmann



Alexei Alexeevich Vorobyov



Venedict Petrovich Dzhelepov



Semen Solomonovich Gershtein



Elmat Avgustovich Vesman



Leonid Ivanovich Ponomarev



Yurii Victorovich Petrov



Stiven Jones



Kenetada Nagamine



Peter Kammel



International Symposium on Muon Catalyzed Fusion, Gatchina, Russia, May 26–29, 1987



International Symposium on Muon Catalyzed Fusion in Sanibel Island, Florida, USA, May 1988



International School
«Exotic Atoms»,
Erice, Italy, May 1989



International School «Exotic Atoms», Erice, Italy, May 1989.
Left to right: P. Pasini, V. S. Melezhik, F. Mulhauser, H. Shneuwly
with his two PhD students, L. Bracci



International School «Exotic Atoms», Erice, Italy, May 1989.
Left to right: M. Petitjean, V. S. Melezhik, C. Petitjean, S. S. Gershtein, L. I. Ponomarev



Laboratory of Computing Techniques and Automation, JINR, Dubna, 1989.
 Left to right: T. P. Puzynina, I. V. Puzynin, V. I. Korobov, T. A. Strizh, V. S. Melezhik

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Laboratory of Nuclear Problems, JINR, Dubna, 1988.
 Left to right: S. Jones, L. I. Ponomarev, V. G. Zinov

Б И П



International Conference on Muon Catalyzed Fusion (μ CF-90), Vienna, Austria,
May 27 – June 1, 1990. Sir C. Frank



International Conference on Muon Catalyzed Fusion (μ CF-90), Vienna, Austria,
May 27 – June 1, 1990.
Left to right: G. Ya. Korenman, J. Zmeskal, Chi-Yu Hu, H. Monkhurst, H. Takahashi



Institute of Medium Energy Physics of the Austrian Academy of Sciences,
Vienna, Austria, December 1991.
Left to right: V. S. Melezhik, M. Jeitler, A. Adamczak



International Workshop on Muon Catalyzed Fusion (μ CF-92),
Uppsala, Sweden, June 28 – July 3, 1992.
Left to right: L. I. Ponomarev, S. S. Gershtein, J. D. Jackson, Yu. V. Petrov



International Workshop on Muon Catalyzed Fusion (μ CF-92),
Uppsala, Sweden, June 28 – July 3, 1992.
Left to right: M. A. Mebel, M. Vecci, F. I. Karmanov, L. A. Karmanova, L. N. Latisheva



The College of William and Mary, Williamsburg, USA, 1993.
R. Siegel (left) and A. Adamczak



Los-Alamos, USA, July 1994. Left to right: V. S. Melezhih, B. Schneider, L. Collins, J. S. Cohen, M. Paciotti with wife, M. Leon with wife



MUCATEX International Board, LNP, JINR, Dubna, June 1995.
Left to right, standing: L. I. Ponomarev, C. Petitjean, J. D. Davies, J. N. Bradbury,
S. S. Gershtein, V. G. Zinov; seated: V. P. Dzhelepov and L. N. Bogdanova



MUCATEX International Board, Moscow, 1999. Left to right: K. Nagamine, J. N. Bradbury, C. Petitjean, L. I. Ponomarev, M. P. Faifman, V. G. Zinov



International Symposium on Muon Catalyzed Fusion (μ CF-95), Dubna, June 19–24, 1995.
Left to right: V. P. Popov, V. G. Zinov, D. I. Abramov, V. I. Korobov, A. A. Yukhimchuk, D. Bakalov, L. I. Ponomarev, D. I. Demin, V. S. Melezhik, M. P. Faifman, L. N. Bogdanova



International Symposium on Muon Catalyzed Fusion (μ CF-95), Dubna, June 19–24, 1995.
Left to right: J. Wallenius, Dasha Bogdanova, J. S. Cohen, P. Froelich



International Symposium on Muon Catalyzed Fusion (μ CF-95), Dubna, June 19–24, 1995.
Left to right: V. I. Korobov, G. Marshall, F. J. Hartmann, C. Petitjean, P. Froelich,
V. P. Dzhelepov, Yu. V. Petrov, K. Nagamine, L. I. Ponomarev, V. G. Zinov,
I. Shimamura, J. D. Davies, J. N. Bradbury



International Symposium on Muon Catalyzed Fusion (μ CF-95), Dubna, June 19–24, 1995



International Symposium on Exotic Atoms, Molecules and Muon Catalyzed Fusion, Ascona, Switzerland, July 19–24, 1998



Rutherford Appleton Laboratory, UK, 1993.
Left to right: J. D. Davies, D. L. Demin, A. A. Yukhimchuk, ?, V. N. Lobanov



TRITON set-up, LNP, JINR, Dubna, 1999. V. G. Zinov (left) and A. A. Yukhimchuk



TRITON set-up, LNP, JINR, Dubna, 1999.
Left to right: V. G. Zinov, A. N. Golubkov, V. G. Grebinnik, A. A. Yukhimchuk



LNP, JINR, Dubna, 1998. Left to right: D. L. Demin, A. A. Yukhimchuk, V. G. Zinov



TRITON set-up, LNP, JINR, Dubna, 1998.
Left to right: A. A. Yukhimchuk, V. Ya. Rozhkov, A. A. Kukolkin



LNP, JINR, Dubna, 1998.
Collaboration meeting on the occasion of the end of RFBR's project



KEK, Japan, 2000. Left to right: M. Kamimura, L. I. Ponomarev, Y. Akaishi, T. Koike



International RIKEN Conference on Muon Catalyzed Fusion and Related Exotic Atoms (μ CF-01), Shimoda, Japan, April 22–26, 2001. Left to right: V. V. Perevozchikov, V. I. Korobov, V. S. Melezhik, E. Widmann, L. N. Bogdanova, D. I. Abramov, D. Bakalov



International RIKEN Conference on Muon Catalyzed Fusion and Related Exotic Atoms (μ CF-01), Shimoda, Japan, April 22–26, 2001. Left to right: T. Matsuzaki, L. I. Ponomarev, V. S. Melezhik, G. G. Semenchuk, V. G. Zinov



International RIKEN Conference on Muon Catalyzed Fusion and Related Exotic Atoms (μ CF-01), Shimoda, Japan, April 22–26, 2001



International RIKEN Conference on Muon Catalyzed Fusion and Related Exotic Atoms (μ CF-01), Shimoda, Japan, April 22–26, 2001



MUCATEX Seminar, Moscow, 1999. Left to right: V. S. Melezhhik, G. Ya. Korenman, N. N. Grafov, V. P. Popov, D. Bakalov, L. I. Ponomarev, V. I. Korobov, M. P. Faifman, V. V. Gusev, A. Adamczak, V. N. Pastushenko, A. I. Mikhailov, D. I. Abramov



International Conference on Muon Catalyzed Fusion and Related Topics,
Dubna, June 18–21, 2007. Left to right: A. D. Konin, G. Ya. Korenman,
D. L. Demin, S. N. Yudin



International Conference on Muon Catalyzed Fusion and Related Topics,
Dubna, June 18–21, 2007. T. Yamazaki (left) and D. L. Demin



International Conference on Muon Catalyzed Fusion and Related Topics,
Dubna, June 18–21, 2007. Left to right: A. A. Yukhimchuk, S. S. Gershtein, V. V. Filchenkov



International Conference on Muon Catalyzed Fusion and Related Topics,
Dubna, June 18–21, 2007. Left to right: S. S. Gershtein, R. S. Hayano,
P. Kammel, L. I. Ponomarev



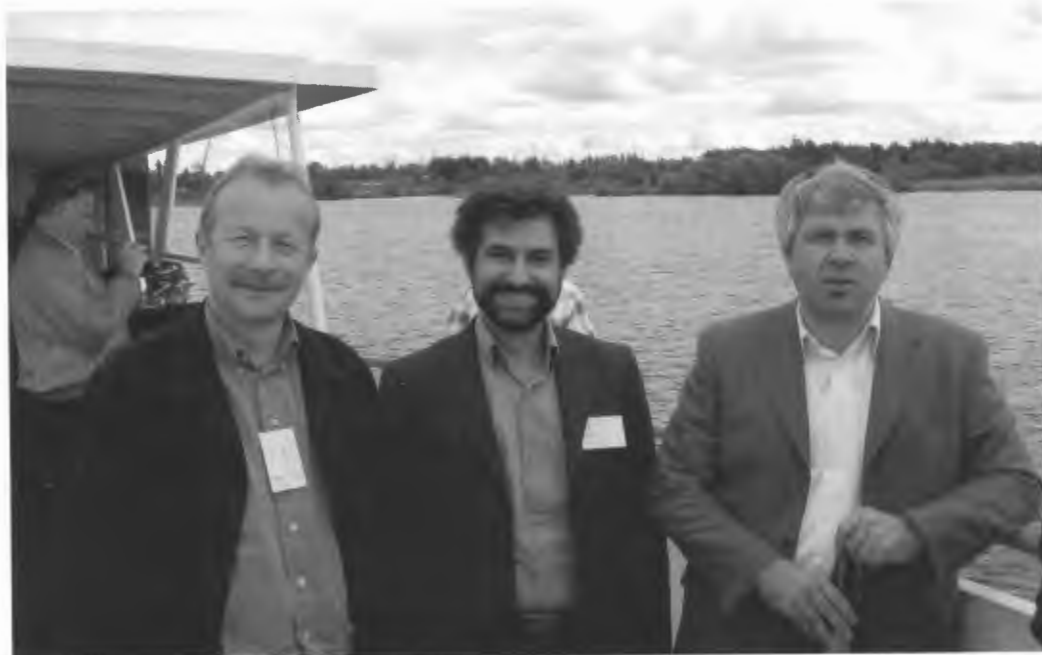
International Conference on Muon Catalyzed Fusion and Related Topics,
Dubna, June 18–21, 2007. Left to right: L. I. Ponomarev, S. S. Gershtein, E. Widmann,
K. Pachucki, F. Vucailovic



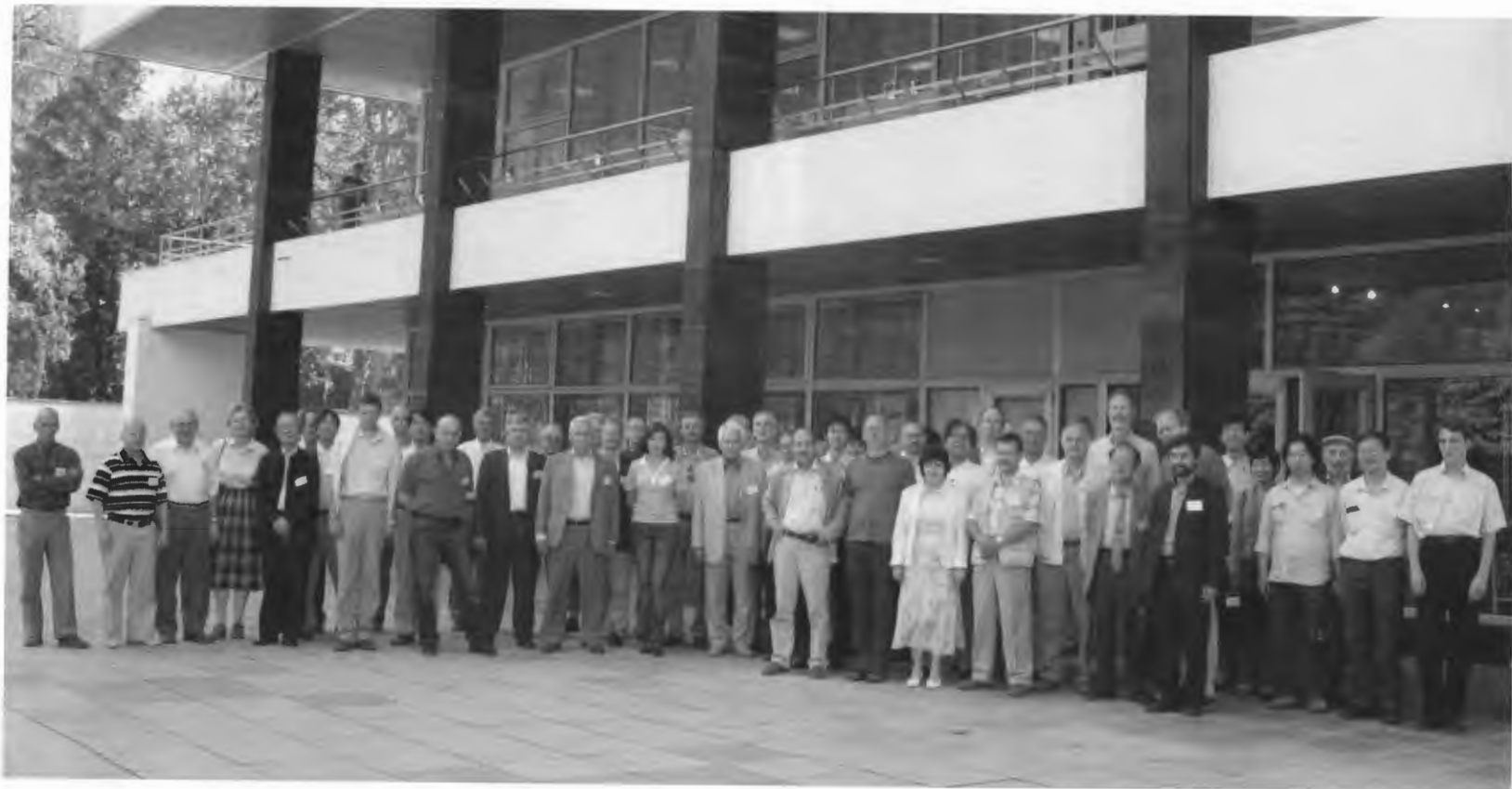
International Conference on Muon Catalyzed Fusion and Related Topics,
Dubna, June 18–21, 2007. First row, left to right: C. Petitjean, J. N. Bradbury, P. Kammel



International Conference on Muon Catalyzed Fusion and Related Topics, Dubna, June 18–21, 2007. In the foreground: M. P. Faifman (left) and D. Taqqu



International Conference on Muon Catalyzed Fusion and Related Topics, Dubna, June 18–21, 2007. Left to right: J. Marton, S. Z. Kalantari, E. Widmann



International Conference on Muon Catalyzed Fusion and Related Topics, Dubna, June 18–21, 2007

56-

Научное издание

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