Proceedings of the Five-Laboratory Conference on Computational Mathematics/Physics
19–23 June 2005

In June 2005, LANL hosted the Joint Russian-American Five-Laboratory Conference (5LC) on Computational Mathematics/Physics at the Crowne Plaza Hotel in Vienna, Austria.
The 2005 5LC was organized by James Kamm of LANL, coordinated by Frankie Gomez of LANL, and supported primarily by the LANL ASC Program Office, with additional significant backing from LLNL and SNL. This meeting revived the series of five such conferences begun at LLNL (1992), then subsequently held at VNIIEF (1993), LANL (1995), VNIITF (1996), and, finally, at SNL (1997). The inspiration for the 2005 5LC was provided by Irv Lindemuth (LANL), who proposed this conference during visits to VNIIEF and VNIITF in 2003. The agenda consisted of technical presentations by a small set of invited subject-matter experts on computational hydrodynamics and computational radiation transport from the five Laboratories.

This meeting took shape through the determined effort of points of contact (POCs) of the five institutions:

LANL:	James Kamm
LLNL:	Howard Scott
SNL:	Paul Yarrington
VNIIEF:	Andrey Grebennikov[1]
VNIITF:	Mikhail Kozmanov

In addition to the POCs named above, the efforts of the following individuals helped to realize this meeting and make it a success: Helmut Filacchioine and Dimitri Kusnezov of NNSA; Jim Arzigian (SNL); Oleg Schilling (LLNL); Frankie Gomez, Irv Lindemuth, James Peery, Mike Stevens, and Tony Zocher (LANL); Rashit Shagaliev, Valentine Spirdonov, Victor Rogachev, and Olga Vorontsova (VNIIEF); Boris Vodolaga (VNIITF); Anne Starz of the DOE office in Vienna, Austria; Gernot Pöchl and staff of the Crowne Plaza Hotel; and the interpreters whose skills made the technical exchange possible: Elena Bloomstein and Andrey Falaleyev (US), Svetlana Gorelova and Olga Seliverstova (VNIIEF), Lada Talantova and Irena Zyrianova (VNIITF).

The time interval between the end of the conference and the dissemination of these proceedings was excessive: I apologize to my colleagues for this delay. In the intervening time, our institutions and our colleagues' careers have evolved. Nevertheless, it remains my hope that these proceedings will prove to be a useful contribution to the technical literature and to the scientific endeavors of our institutions.

James Kamm

Los Alamos, New Mexico
September 2009

[1] Originally, Rashit Shagaliev was to be the VNIIEF POC, but Andrey Grebennikov later assumed this position.

Contents of the 2005 5LC Proceedings CD

This CD contains two files in the main directory:

`5LC_Proceedings_Overview.pdf` is this file, and

`5LC_FinalAgenda.pdf` is the final agenda of the meeting.

The agenda document contains the name of each presenter and the title of their presentation, all in both English and Russian.

Additionally, the main directory of this CD also has two subdirectories, each containing directories corresponding to each institution:

`2005_5LC_Papers` contains the full papers,

`2005_5LC_Presentations` contains the presentations.

The titles of the PDF files in the subdirectories *Name*`_Paper` or *Name*`_Presentation` in each of the institutions' directories are of the form:

Name_Topic_TL.pdf

where,

Name = English-language last name of the presenter

Topic = Abbreviation of the technical topic:

EulHyd = Eulerian Hydrodynamics	DetTran = Deterministic Transport
LagHyd = Lagrangian Hydrodynamics	StoTran = Stochastic Transport
OthHyd = Other Hydrodynamics	OthTran = Other Transport

T = Type: V (viewgraphs) or P (paper)

L = Language: E (English) or R (Russian)

This CD is available as Los Alamos National Laboratory Report LA-UR-08-06199.

List of 2005 5LC Participants, by Name

Name	*Affiliation*	*Name*	*Affiliation*
Arzigian, James S.	SNL	Moskvin, A. N.	VNIIEF
Belyakov, I. M.	VNIIEF	Mousseau, Vincent	LANL
Bloomstein, Elena*	SNL	Owen, John (Mike)	LLNL
Bochev, Pavel	SNL	Pautz, Shawn	SNL
Bondarenko, Yu. A.	VNIIEF	Pember, Richard	LLNL
Brunner, Thomas A.	SNL	Procassini, Richard	LLNL
Bykov, Alexander N.	VNIIEF	Pronin, Y. V.	VNIITF
Carrington, David B.	LANL	Rathkopf, James	LLNL
Chang, Jae H.	LANL	Rider, William J.	LANL
Compton, John C.	LLNL	Robinson, Allen	SNL
Cook, Andrew	LLNL	Safronov, Sergey	VNIIEF
Crawford, David A.	SNL	Saveliev, Vadim	VNIITF
Densmore, Jeffery D.	LANL	Schilling, Oleg	LLNL
Falaleyev, Andrei*	LLNL	Schmitt, Robert G.	SNL
Filacchione, Helmut	DOE/NNSA	Scott, Howard A.	LLNL
Gentile, Nicholas	LLNL	Seliverstova, Olga*	VNIIEF
Gomez, Frankie	LANL	Shagaliev, Rashit	VNIIEF
Gordeychuk, V. A.	VNIITF	Shashkov, Mikhail	LANL
Gorelova, Svetlana*	VNIIEF	Shestakov, A. A.	VNIITF
Grebennikov, A. N.	VNIIEF	Shmakov, V. M.	VNIITF
Kamm, James	LANL	Shnitko, A. S.	VNIITF
Kozmanov, Mikhail	VNIITF	Sokolov, S. S.	VNIIEF
Kusnezov, Dimitri	DOE/NNSA	Spiridonov, V. F.	VNIIEF
Lebedev, S. N.	VNIITF	Talantova, Lada*	VNIITF
Lomov, Ilya N.	LLNL	Voronina, V. P.	VNIITF
Lorence, Leonard J.	SNL	Yanilkin, Y. V.	VNIIEF
Malakhov, A. A.	VNIITF	Yarrington, Paul	SNL
Margolin, Len	LANL	Zhitnik, A. K.	VNIIEF
Moran, Bill	LLNL	Zyryanova, Irina*	VNIITF

* Interpreter

List of 2005 5LC Participants, by Affiliation

Name	*Affiliation*	*Name*	*Affiliation*
Carrington, David B.	LANL	Filacchione, Helmut	DOE/NNSA
Chang, Jae H.	LANL	Kusnezov, Dimitri	DOE/NNSA
Densmore, Jeffery D.	LANL		
Gomez, Frankie	LANL	Belyakov, I. M.	VNIIEF
Kamm, James	LANL	Bondarenko, Yu. A.	VNIIEF
Margolin, Len	LANL	Bykov, Alexander N.	VNIIEF
Mousseau, Vincent	LANL	Gorelova, Svetlana*	VNIIEF
Rider, William J.	LANL	Grebennikov, A. N.	VNIIEF
Shashkov, Mikhail	LANL	Moskvin, A. N.	VNIIEF
		Safronov, Sergey	VNIIEF
Compton, John C.	LLNL	Seliverstova, Olga*	VNIIEF
Cook, Andrew	LLNL	Shagaliev, Rashit	VNIIEF
Gentile, Nicholas	LLNL	Sokolov, S. S.	VNIIEF
Lomov, Ilya N.	LLNL	Spiridonov, V. F.	VNIIEF
Moran, Bill	LLNL	Yanilkin, Y. V.	VNIIEF
Owen, John (Mike)	LLNL	Zhitnik, A. K.	VNIIEF
Pember, Richard	LLNL		
Procassini, Richard	LLNL	Gordeychuk, V. A.	VNIITF
Rathkopf, James	LLNL	Kozmanov, Mikhail	VNIITF
Schilling, Oleg	LLNL	Lebedev, S. N.	VNIITF
Scott, Howard A.	LLNL	Malakhov, A. A.	VNIITF
Falaleyev, Andrei*	LLNL	Pronin, Y. V.	VNIITF
		Saveliev, Vadim	VNIITF
Arzigian, James S.	SNL	Shestakov, A. A.	VNIITF
Bochev, Pavel	SNL	Shmakov, V. M.	VNIITF
Brunner, Thomas A.	SNL	Shnitko, A. S.	VNIITF
Crawford, David A.	SNL	Talantova, Lada*	VNIITF
Lorence, Leonard J.	SNL	Voronina, V. P.	VNIITF
Pautz, Shawn	SNL	Zyryanova, Irina*	VNIITF
Robinson, Allen	SNL		
Schmitt, Robert G.	SNL		
Yarrington, Paul	SNL		
Bloomstein, Elena*	SNL		

* Interpreter

Group Photograph: 2005 5LC Participants

Figure 1. Attendees of the Joint Russian-American Five-Laboratory Conference on Computational Mathematics/Physics, Thursday 23 June 2005. Identification of the individuals pictured is provided on the following pages.

Figure 2. Numbered diagram of the attendees of the Joint Russian-American Five-Laboratory Conference on Computational Mathematics/Physics, Thursday 23 June 2005, as in Figure 1. A list identifying the individuals depicted above is provided on the following page.

	Name	*Affiliation*		*Name*	*Affiliation*
1	Lorence, Leonard J.	SNL	29	Robinson, Allen	SNL
2	Pautz, Shawn	SNL	30	Moskvin, A. N.	VNIIEF
3	Yarrington, Paul	SNL	31	Belyakov, I. M.	VNIIEF
4	Gomez, Frankie	LANL	32	Chang, Jae H.	LANL
5	Kamm, James	LANL	33	Bochev, Pavel	SNL
6	Grebennikov, A. N.	VNIIEF	34	Compton, John C.	LLNL
7	Kozmanov, Mikhail	VNIITF	35	Bondarenko, Yu. A.	VNIIEF
8	Scott, Howard A.	LLNL	36	Shnitko, A. S.	VNIITF
9	Cook, Andrew	LLNL	37	Voronina, V. P.	VNIITF
10	Lebedev, S. N.	VNIITF	38	Gordeychuk, V. A.	VNIITF
11	Shmakov, V. M.	VNIITF	39	Seliverstova, Olga*	VNIIEF
12	Bykov, Alexander N.	VNIIEF	40	Rathkopf, James	LLNL
13	Safronov, Sergey	VNIIEF	41	Pronin, Y. V.	VNIITF
14	Carrington, David B.	LANL	42	Filacchione, Helmut	DOE/NNSA
15	Mousseau, Vincent	LANL	43	Sokolov, S. S.	VNIIEF
16	Gentile, Nicholas	LLNL	44	Spiridonov, V. F.	VNIIEF
17	Densmore, Jeffery D.	LANL	45	Margolin, Len	LANL
18	Owen, John (Mike)	LLNL	46	Pember, Richard	LLNL
19	Schilling, Oleg	LLNL	47	Brunner, Thomas A.	SNL
20	Falaleyev, Andrei*	LLNL	48	Shashkov, Mikhail	LANL
21	Saveliev, Vadim	VNIITF	49	Zhitnik, A. K.	VNIIEF
22	Malakhov, A. A.	VNIITF	50	Crawford, David A.	SNL
23	Shestakov, A. A.	VNIITF	51	Bloomstein, Elena*	SNL
24	Zyryanova, Irina*	VNIITF	52	Kusnezov, Dimitri	DOE/NNSA
25	Talantova, Lada*	VNIITF	53	Rider, William J.	LANL
26	Arzigian, James S.	SNL	54	Lomov, Ilya N.	LLNL
27	Shagaliev, Rashit	VNIIEF	55	Yanilkin, Y. V.	VNIIEF
28	Gorelova, Svetlana*	VNIIEF			

*Interpreter

The following conference participants are not pictured: Bill Moran (LLNL), Richard Procassini (LLNL), and Robert Schmitt (SNL).