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Produced by the NASA Center for Aerospace Information (CASI)
The 1983 International Multigrid Conference was held at Colorado's Copper Mountain Ski Resort, April 5-8. It was organized jointly by the Institute for Computational Studies at Colorado State University, U.S.A., and the Gesellschaft fur Mathematik und Datenverarbeitung Bonn, F.R. Germany, and was sponsored by the Air Force Office of Sponsored Research and National Aeronautics and Space Administration Headquarters. The conference was attended by 80 scientists, divided by institution almost equally into private industry, research laboratories, and academia. Fifteen attendees came from countries other than the U.S.A. In addition to the fruitful discussions, the most significant factor of the conference was of course the lectures. The lecturers include most of the leaders in the field of multigrid research. The program offered a nice integrated blend of theory, numerical studies, basic research, and applications. Some of the new areas of research that have surfaced since the Koln-Porz conference include: the "algebraic multigrid approach; multigrid treatment of Euler equations for incompressible fluid flow problems; (CONTINUED)
ITEM #19, ABSTRACT, CONTINUED: 3-D problems; and the application of MG methods on vector and parallel computers. New results have also been achieved in the following areas: software for standard elliptic problems (finite element and finite differences); bifurcation problems; grid manipulation processes; and comparisons with other techniques.

Questionnaires were sent to all participants after the conference, with about a third responding. It is encouraging to note that there was virtually unanimous enthusiasm about the conference, facilities, organization, and environment. There was especially positive response concerning the lecture content and format. It is significant that all those who responded to question 9 concerning another meeting indicated that they would like one held by 1984 or 1985. Attached to this report are the completed questionnaires and a list of the speakers and attendees.

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FINAL REPORT

for

NASA Contract No. NASW-3773
"Conduct of the International Multigrid Conference"

Dr. Stephen McCormick
Principal Investigator

Approved for public release; distribution unlimited.
The 1983 International Multigrid Conference was held at Colorado's Copper Mountain Ski Resort, April 5-8. It was organized jointly by the Institute for Computational Studies at Colorado State University, U.S.A., and the Gasellschaft fur Mathematik und Datenverarbeitung Bonn, F.R. Germany, and was sponsored by the Air Force Office of Sponsored Research and National Aeronautics and Space Administration Headquarters. The conference was attended by 80 scientists, divided by institution almost equally into private industry, research laboratories, and academia. Fifteen attendees came from countries other than U.S.A.

In addition to the fruitful discussions, the most significant factor of the conference was of course the lectures. The lecturers include most of the leaders in the field of multigrid research. The program offered a nice integrated blend of theory, numerical studies, basic research, and applications. Some of the new areas of research that have surfaced since the Koln-Porz conference include:

- the "algebraic" multigrid approach;
- multigrid treatment of Euler equations for inviscid fluid flow problems;
- 3D-Problems; and
- the application of MG methods on vector and parallel computers.

New results have also been achieved in the following areas:

- software for standard elliptic problems (finite element and finite differences);
- bifurcation problems;
- grid manipulation processes; and
- comparisons with other techniques.
Questionnaires were sent to all participants after the conference, with about a third responding. It is encouraging to note that there was virtually unanimous enthusiasm about the conference, facilities, organization, and environment. There was especially positive response concerning the lecture content and format. It is significant that all those who responded to question 9 concerning another meeting indicated that they would like one held by 1984 or 1985.

Attached to this report are the completed questionnaires and a list of the speakers and attendees.
CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

Very important and very beneficial. I like conferences where I do not need an automobile, where the participants are relatively isolated from the outside world, and where some physical activity is possible.

2. From which lectures or types of lectures did you benefit most?

Brandt's survey lecture (not the paper), Stuben's paper on Algebraic Multigrid, Thames' paper on mesh generation, and papers by Caughey, Jameson, and Jesperson.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

I like a tight order of the paper presentations, which corresponds to the published schedule.

There was a problem starting the sessions at 8:00am because the restaurant did not open until 7:30am and service was slow.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

1. Algebraic Multigrid concepts. 2. Confirmation of my suspicions, dating back to 1977, that MG will have trouble with high Reynolds number problems unless upwind differencing is used on coarse grids. (MG makes the cell Reynolds number problem worse.) 3. Awareness of the wide variety of cycling schemes used. (I still think Cycle C is best.) 4. Difficulty of proper smoothing algorithm for complex problems.

5. How did the conference contribute to your own professional activities?

Definitely helped, notably in the areas of three-dimensional grid generation, fluid dynamics, and electric field calculations.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Developer of algorithms and codes for solving 2D and 3D problems of fluid dynamics and electrostatics, especially in boundary-fitted non-orthogonal coordinates. Benefitted from contacts with both other "practitioners" and with the intelligible theoretical people.

7. What were the conference's good and bad points?

Good: location, scheduling, quality of the best speakers, lodging
Bad: The written papers, abstracts, and conference schedule were poorly organized. Even a conference with an informal atmosphere needs a firm schedule, sent at least one week ahead of the conference to the attendees.

8. In your opinion, was the conference a success or failure?

Unqualified success; one of the best conferences I have attended in years.

9. Would you like to see another MG Conference (who, when and where)?

Yes; same community + any other contributors who know what they are doing— one or one and ½ year intervals. I like Colorado, but the international flavor and cooperation would be enhanced by moving it around. How about a conference nominally every 1½ years, with late-winter/spring meetings in Colorado alternating with a late-summer/fall meeting in Europe (Germany, Holland, Britain) or Israel?

10. Additional comments:

* and a booklet of 1- or 2-page abstracts bound together in the order of presentation. With more effort and organizational money, one can provide the actual papers in a bound volume as the AIAA does, but this requires more lead time and cuts out the most recent results. However, the booklet of abstracts is not difficult and helps immensely in planning and taking notes, and should be absolutely required from the authors. As an option, in addition to the bound abstracts, the authors can also provide drafts of the full papers, as done at this conference, but these must be STAPLED! The situation of having a lap full of 20 papers, unstapled, not in any **

Name Optional

Patrick J. Roache

**order (either alphabetical on authors names, or in order of presentation), and contending with changes in the order of papers from the schedule, all the while trying to take notes, detracted from the experience. I know other conferences have the same problems, but it is unnecessary.
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference? (e.g., choice of a recreational resort contributed to a relaxed environment which, I think, is important to a good conference)

2. From which lectures or types of lectures did you benefit most? (e.g., those involving multiphase applications to parabolic & hyperbolic type probs.)

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you? (e.g., learned that we have a long way to go to make multiphase work in complex reservoir simulation, prob. - applications to reservoir simulation)

5. How did the conference contribute to your own professional activities?

Was enlightening with regard to staying on top of where we stand. We are not actively pursuing multiphase methods, but rather are monitoring progress in this area.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

   Researcher with applications orientation.

7. What were the conference's good and bad points?
   (Bad) Too many speakers scheduled each day.
   (Good) Good international representation; Small group enhancing informality of communication; Scholars of technology well represented.

8. In your opinion, was the conference a success or failure?

   Success.

9. Would you like to see another MG Conference (who, when and where)?

   Yes - Possibly biannually; Spring is a good time assuming the season will not be bypassed as in Colo. This yr. I like the notion of a Colorado mountain resort or the AM evening sessions as after lunch free. The format has been used to good advantage at other conferences but attended.

10. Additional comments:

    Gordon Research Conf., Yemboea Conf., etc. forums, etc.)
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
    Department of Conferences and Institutes
    Rockwell Hall
    Colorado State University
    Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   ENVIRONMENT WAS INFORMAL — LED TO A
   RELAXED ATMOSPHERE — GOOD FOR EXchanging-Ideas

2. From which lectures or types of lectures did you benefit most?
   - Lectures Pertaining To my own Area Of
   - Research (i.e. Reservoir Simulation) Were
   - Most interesting

3. Please comment on the planning of the schedule and program (timings, topics, etc.
   - Well organized

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

5. How did the conference contribute to your own professional activities?
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Practitioner - Yes I benefited from contact with basic researchers

7. What were the conference's good and bad points?

- Very well organized conference
- Great skiing

8. In your opinion, was the conference a success or failure?

- Success

9. Would you like to see another MG Conference (who, when and where)?

Yes I would like to see another MG conference

- In 1-2 years - Western US is a good location for me

10. Additional comments:

__Olesa Tobi__
Name Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

   Copper Mountain was pleasant and made the conference more enjoyable. Conference room itself was much too crowded.

2. From which lectures or types of lectures did you benefit most?

   The lectures on multidimensional flow.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

   Okay

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

   Yes, general understanding of multilevel.

5. How did the conference contribute to your own professional activities?

   Plan to use multilevel in the near future, made interesting contacts with other people.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Yes, applied researcher with basic researcher.

7. What were the conference's good and bad points?

Bad - crowded room.
Good - most speakers.

8. In your opinion, was the conference a success or failure?

Success!

9. Would you like to see another MG Conference (who, when and where)?

Yes, ~1-1/2 year, "nice" geographical location in US.

10. Additional comments:

"...

Name: Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO
CONFERENCE QUESTIONNAIRE

Please return by May 30
To: Gloria Jean Thomas, Conference Coordinator
   Department of Conferences and Institutes
   Rockwell Hall
   Colorado State University
   Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   Beautiful environment with positive influence on conference.

2. From which lectures or types of lectures did you benefit most?
   For me the most beneficial were those dealing with multigrid applied to specific problems.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)
   Conference was well-planned, scheduling was unusual (8-12, 5-6pm) but worked out well.
   Programming was well-done, lecture room needed to be bigger.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
   Main value for me was in learning how other people with similar problems used them and multigrid. The important areas to me were fluid dynamics and nonsymmetric problems.

5. How did the conference contribute to your own professional activities?
   Keeps me abreast of the latest in multigrid.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Application - practitioner:
I must say the theoreticians and those engaged in solving Laplace's equation didn't have much to offer me.

7. What were the conference's good and bad points?
Good: top people in field, beautiful setting
Bad: small lecture room, a couple of bad talks.

8. In your opinion, was the conference a success or failure?
Success.

9. Would you like to see another MG Conference (who, when and where)?

?

10. Additional comments:

[Signature]

Name Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
   Department of Conferences and Institutes
   Rockwell Hall
   Colorado State University
   Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

2. From which lectures or types of lectures did you benefit most?

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

5. How did the conference contribute to your own professional activities?
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

   basic researcher: I contact with practitioners was weak...

7. What were the conference's good and bad points?

   good: environment
   bad: too short a time to adapt to the seminar | no library

8. In your opinion, was the conference a success or failure?

   success

9. Would you like to see another MG Conference (who, when and where)?

   yes 1 '84 or '85 | was fun perhaps Fort Collins?

10. Additional comments:

    The personal organization of Denis Thomas was extremely wonderful, a lot of thanks.

    [Signature]

    Name Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO
CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   The environment was very enjoyable and relaxing to me. I think it had a very positive effect upon the conference in that our saturation point was increased.

2. From which lectures or types of lectures did you benefit most?
   Lectures which dealt with general concepts and ideas, instead of specific problems.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
   AMG spectral multigrid - someone in our group is working on this and it was interesting to me as well.

5. How did the conference contribute to your own professional activities?
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

As a basic researcher, I benefited most from the talks on concepts since no one really addressed the specific area that I am working on.

7. What were the conference's good and bad points?

Good points - well organized, relaxed atmosphere, afternoon break

Bad points - conference room too crowded

8. In your opinion, was the conference a success or failure?

9. Would you like to see another MG Conference (who, when and where)?

10. Additional comments:

[Signature: Paul E. Ciarletta]

Name Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

   It was very nice; the casual atmosphere
carried over nicely into the sessions.

2. From which lectures or types of lectures did you benefit most?

   I enjoyed the mix of basic and applied papers.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

   The schedule, with afternoons free, was very relaxing.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

   I carried away a better appreciation for the
   breadth of fields affected by multi-grid; also received
   specific comments relating to my own special area.

5. How did the conference contribute to your own professional activities?
INTERNATIONAL MULTIGRID CONFERENCE
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CONFERENCE QUESTIONNAIRE
Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Basic researcher & teacher.
Yes, the cross-pollination is essential.

7. What were the conference's good and bad points?
Good: [Blank]
Bad: [Blank]

8. In your opinion, was the conference a success or failure?
A successful bringing together of basic & applied research.

9. Would you like to see another MG Conference (who, when and where)?
Yes, but probably not more often than every 2 or 3 years.

10. Additional comments:

______________________________
Name Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
   Department of Conferences and Institutes
   Rockwell Hall
   Colorado State University
   Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   It helped create a relaxed atmosphere; not having continual lectures
   from 8:00 a.m. to 5:00 p.m. (as is common in other conferences) helped
   increase the amount I could learn (i.e., I didn't get burned out).

2. From which lectures or types of lectures did you benefit most?

   The lectures given in Session II (wed. evening)

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

   I was very interested to learn about AMG (Algebraic Multigrid)
   theory and results.

5. How did the conference contribute to your own professional activities?

   It helped me to get a better handle on what has been done with multigrid methods and what applications are currently being investigated.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

   Graduate student involved in basic research on solving spectral
   equations using multigrid techniques.

7. What were the conference's good and bad points?

8. In your opinion, was the conference a success or failure?

   success

9. Would you like to see another MG Conference (who, when and where)?

10. Additional comments:

    1) The lecture room was extremely cramped
    2) Somehow I managed to get a room directly over a bar
    in which a live band played each night. Consequently
    I did not get much of a chance to sleep.

   ____________
   Scott R. Fenton
   Name Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
   Department of Conferences and Institutes
   Rockwell Hall
   Colorado State University
   Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   Excellent

2. From which lectures or types of lectures did you benefit most?
   Having the Proceedings Available at the Conference

3. Please comment on the planning of the schedule and program (timings, topics, etc.)
   Excellent, but Friday morning check-in requirement badly affected attendance than

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
   Multigrid status
   Transonic applications

5. How did the conference contribute to your own professional activities?
   Helped in my teaching of seminar
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
CONFERENCE QUESTIONNAIRE
Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)?
   Did you have beneficial contact with others involved in different activities?
   (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

   Question too diffuse

7. What were the conference's good and bad points?
   food service, especially breakfast
   on a chairlift, a colleague must answer your questions

8. In your opinion, was the conference a success or failure?

   Success

9. Would you like to see another MG Conference (who, when and where)?

   Sure, same place, but aren't there already many?

10. Additional comments:
    
    You did a good job Steve.

K. Cemstefson
Name Optional
CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
   Department of Conferences and Institutes
   Rockwell Hall
   Colorado State University
   Fort Collins, CO 80523

1. What do you think about the environment and how it affected the conference?
   Excellent environment, stimulated attendance, contributed to personal exchanges

2. From which lectures or types of lectures did you benefit most?
   Detailed scientific reports & surveys

3. Please comment on the planning of the schedule and program (timings, topics, etc.)
   Generally well done

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
   Yes. As an outsider to this specialty, I gained insight into the nature of problems, kind of activities and results, and attitudes of principal workers

5. How did the conference contribute to your own professional activities?
   Great insight into an active area of research
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
CONFERENCE QUESTIONNAIRE
Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

7. What were the conference's good and bad points?

Four bad points, many good. Good selection of speakers & good location

8. In your opinion, was the conference a success or failure?


9. Would you like to see another MG Conference (who, when and where)?

Yes in 1-2 yrs

10. Additional comments:

In many ways this was a model of attractive scientific/useful meeting

Name Optional

David W. Fox
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
    Department of Conferences and Institutes
    Rockwell Hall
    Colorado State University
    Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   The meeting room was quite crowded, but otherwise suitable. It was
   unfortunate that we were left in the dark as to food facilities on
   the first evening and morning.

2. From which lectures or types of lectures did you benefit most?
   I benefit most from the lectures which deal mostly with computer
   techniques, rather than with the underlying math theories.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)
   Fine.

4. Please comment on the educational value of the conference. Did you learn any-
   thing from attending the conference? If so, what specific areas were important
   to you?
   It was interesting to see that more people in the session were
   interested in accuracy than in time and cost of computations.

5. How did the conference contribute to your own professional activities?
   I am better able to deal with my customers when I know what
   their interest are.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

I am a pre-sales analyst for a computer vendor, CRAY RESEARCH. I had beneficial contact with several people.

7. What were the conference's good and bad points? GOOD: lectures, people, skiing.

BAD: food services, condos (instead of singles), incorrect spelling of names on lists.

8. In your opinion, was the conference a success or failure? Success.

9. Would you like to see another MG Conference (who, when and where)? Yes.

10. Additional comments:

Please keep me on your mailing list for all conferences that might possibly interest a computer analyst.

Thank you.

GEORGE W. PACKAGE
Name Optional
CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference? I did not like the location. The conference facilities were single just OK, but the room rates were far too high and the cold was not very pleasant either. Obviously, I am a non-skier.

2. From which lectures or types of lectures did you benefit most? The first session was by far the best. The most beneficial lectures were those in dealing with large 3-dimensional problems being fairly simple PDE's.

3. Please comment on the planning of the schedule and program (timings, topics, etc.) I thought the schedule and program were well done.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you? I learned a great deal in the areas mentioned above in no. 2.

5. How did the conference contribute to your own professional activities? The conference was very valuable in that it increased my confidence in my knowledge of multi-grid and also acquainted me with the current state-of-the-art in multi-grid. I also met some of the minor dictors of multi-grid like Banks and McCormick.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

I am a basic researcher in numerical modeling of atmospheric processes near the surface of the earth. As such, I am a user of multi-grid techniques. I found it very useful to talk to others involved both in the use and development of multi-grid techniques.

7. What were the conference's good and bad points?

My only complaint is on the location. As a federal employee, my per diem did not even cover the cost. I had to make up the difference with my own funds.

8. In your opinion, was the conference a success or failure?

It was a big success. As you alluded to in no. 6 above, it is always beneficial to bring together workers having different backgrounds because it allows for valuable interaction.

9. Would you like to see another MG Conference (who, when and where)?

Yes, very much. I think that one year from now would be a good time. As for the location, any place other than a resort area would be fine.

10. Additional comments:

William Thompson
Name Optional
CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   Beneficial, "cozy" atmosphere facilitated talking to people.

2. From which lectures or types of lectures did you benefit most?
   Those comparing multigrid with other methods on realistic problems. I like to see both theoretical work and computational results.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
   Very educational. Randy Brandt's talks, & his Brandt's were informative. The talks of Belis, Forsyth, and Darb, McCormick, Least were particularly relevant to my work. The non algebraic multigrid (Brandt, McCormick, Ruge, and Trotter) was good. Tony Jow's talks were worthwhile.

5. How did the conference contribute to your own professional activities?
6. What are your activities (practitioner, basic researcher, observer, etc.)?
Did you have beneficial contact with others involved in different activities?
(e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Basic researcher/practitioner. My work requires both activities.

7. What were the conference's good and bad points?

Good points: Planned dinner & banquet.
Bad points: No space between plenary, lack of restaurants for early breakfast.

8. In your opinion, was the conference a success or failure?

Success.

9. Would you like to see another MG Conference (who, when and where)?

Yes. Should have Achi Brandt & Randy Burk.

10. Additional comments:

Very good conference

David P. Young
Name Optional
Conférence Multigrille Internationale

Avril 5-8, 1983

Copper Mountain, Colorado

Conférence Questionnaire

Veuillez retourner par mai 30

À: Gloria Jean Thomas, Conférencier de Conferences and Institutes
    Département de Conferences et Instituts
    Rockwell Hall
    Université de Colorado State University
    Fort Collins, Co 80523

1. Que pensez-vous de l'environnement et de son impact sur la conférence?
   L'environnement était très favorable à la conférence.

2. De quelles conférences ou types de conférences avez-vous le plus bénéficié?
   Les conférences qui ont abordé certains aspects théoriques de Multigrille.

3. Commentez l'organisation de l'horaire et du programme (horaires, sujets, etc.)
   L'organisation et la coordination étaient excellentes.

4. Commentez la valeur éducative de la conférence. Êtes-vous appris quelque chose
   à l'occasion de la conférence? Si oui, quelles étaient les zones spécifiques
   importantes pour vous?
   La conférence a été très informatif pour moi.
   Le AMG a été la zone que j'ai le plus apprécié.

5. Comment la conférence a-t-elle contribué à vos propres activités professionnelles?
   Le AMG a été convaincu que nous allons avoir un vrai boîte noire Multigrille
   dans le futur proche.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

basic researcher and lots of activities in
real applications. I believe I learn more
from CS U basic researchers.

7. What were the conference's good and bad points?

bad point: being a little too long.
good points: topics covered

8. In your opinion, was the conference a success or failure?

a success

9. Would you like to see another MG Conference (who, when and where)?

maybe in another year. The same
location is fine.

10. Additional comments:

Great job overall.

M. G. Mandelb"{u}h

Name Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   SKIING WAS FUN, BUT IT DEFINITELY CAME CUTS DOWN ON THE ACCOMPLISHMENTS OF THE CONFERENCE. FOR ONE THING IT OCCUPIED A SIGNIFICANT AMOUNT OF TIME.

2. From which lectures or types of lectures did you benefit most?
   NOT BEING A MATHEMATICIAN, I GOT MORE OUT OF THE PAPERS WITH AN ENGINEERING APPROACH.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)
   SCHEDULE WAS FINE, EXCEPT FOR THE PROBLEM WITH GETTING BREAKFAST (SINCE NOTHING WAS OPEN)

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
   THE CONFERENCE HAS GIVEN ME IDEAS ON THINGS TO TRY (IF I HAVE TIME). I HAVE GOTTEN A BETTER FEEL FOR WHAT IS POSSIBLE USING MULTIGRID.

5. How did the conference contribute to your own professional activities?
   SEE (4.)
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

BASIC RESEARCH IN COMPUTATIONAL FLUID MECHANICS.
USER OF MULTIGRID TO SPEED COMPUTATIONS.
I HAD BENEFICIAL CONTACT WITH OTHERS.

7. What were the conference's good and bad points?

THE CONFERENCE'S BAD POINT (WITH RESPECT TO ME) WAS THE VERY MATHEMATICAL (NOTATION, ETC.) NATURE OF THE PAPERS, PRESENTATIONS. MANY POOR PRESENTATIONS (TYPICAL).

8. In your opinion, was the conference a success or failure?

SUCCESS

9. Would you like to see another MG Conference (who, when and where)?

ABOUT EVERY 2 YEARS. NOT MUCH USE TO ME UNLESS IN THE U.S.

10. Additional comments:

[Signature]
Name Optional
Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
   Department of Conferences and Institutes
   Rockwell Hall
   Colorado State University
   Fort Collins, CO 80523

1. What do you think about the environment and how it affected the conference?
   Good environment - could move to informal discussion.

2. From which lectures or types of lectures did you benefit most?
   1. Algebraic Multigrid
   2. Applications of Multigrid

3. Please comment on the planning of the schedule and program (timings, topics, etc.)
   Good

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
   Yes
   See 2. Above

5. How did the conference contribute to your own professional activities?
   Improved communications with mathematical multigrid community.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

   ENGINEERING RESEARCHER
   CONTACT WITH MG MATHEMATICIANS WAS BENEFICIAL

7. What were the conference's good and bad points?
   BAD - THE CONFERENCE ROOM WAS TOO SMALL
   GOOD - EVERYTHING ELSE

8. In your opinion, was the conference a success or failure?
   SUCCESS

9. Would you like to see another MG Conference (who, when and where)?
   YES, EVERY TWO YEARS OR SO, ALTERNATING BETWEEN NORTH AMERICA AND EUROPE

10. Additional comments:
    THANKS FOR THE GOOD WORK MS. THOMAS!

   GARY M. JOHNSON
   Name Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   Environment was most attractive, however, I don't ski!
   Lack of dining facilities is a problem; Copper Mountain's handling
   of bad arrangements was enthralling, but disorganized
   and sometimes a bit crude. The accommodations were pleasant, but confusing.

2. From which lectures or types of lectures did you benefit most? Lecture meeting
   facilities are so specialized that they are all of 
good interest. My main interests were in fluid dynamics,
   but general ideas are of great value in this subject.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)
   Timing was fine, program materials of the best sort to
   appear so far at a general multigrid conference. Papers
   were generally of very high quality.

4. Please comment on the educational value of the conference. Did you learn anything
   from attending the conference? If so, what specific areas were important
   to you?
   No question a great deal was learned - can't tell
   a priori which ideas will be of most use in future.

5. How did the conference contribute to your own professional activities?
   Main benefit, aside from technical exchange, was
   opportunity to meet other practitioners. Such things
   are essential to professional activity.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

I'm a basic researcher by nature, a practitioner by necessity. No question that the spectrum of interests present was one of the major strengths of the conference.

7. What were the conference's good and bad points? (Covered rather thoroughly above)

8. In your opinion, was the conference a success or failure? This is clearly a success, but see 9.

9. Would you like to see another MG Conference (who, when and where)? Yes; however, it should be noted that it takes a while in this field before there is good deal of quality material to present. Frequency may be the enemy of quality.

10. Additional comments:

  [Signature]
  Name Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   A good relaxing environment

2. From which lectures or types of lectures did you benefit most?
   Most were beneficial, both general and topical

3. Please comment on the planning of the schedule and program (timings, topics, etc.)
   It was very useful to have the afternoons free

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
   Multigrid in fluid flow problems

5. How did the conference contribute to your own professional activities?
   New contacts
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

   Basic researcher. The contact with real applications was useful.

7. What were the conference's good and bad points?
   Good points: Broad cross section of interests, ample opportunity for interaction
   Bad points: Banquet fare was adequate but needing

8. In your opinion, was the conference a success or failure?

9. Would you like to see another MG Conference (who, when and where)?
   Yes, a year or two, Vail

10. Additional comments:

    ______________________
    Name Optional

    Steve Schaffer
CONGRESS QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   It was very pleasant, and had a good effect.
   Having talks in the morning and evening rather than afternoon was especially a good idea.

2. From which lectures or types of lectures did you benefit most?
   Those on new research topics such as AMG, and accessible theory talks like Anne Goodwin.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)
   Very well planned.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
   Learning the problems and successes of object multigrid was important to me as well as informal conversations with attendees.

5. How did the conference contribute to your own professional activities?
   It stimulated several areas of research. In particular, on Helmholtz equations.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Basic researcher. I benefited from learning about some of the problems faced by people at Exxon in economics.

7. What were the conference's good and bad points?

The good: Theory and some new work and really applied work by great people has trouble breaking it. But the main theme was quite good and I hope the sentiment state.

8. In your opinion, was the conference a success or failure?

Success

9. Would you like to see another MG Conference (who, when and where)?

Yes, in about 2 years. Almost on exact regret would be fine, or it could be given by New Year, Tel. Only at Los Alamos.

10. Additional comments:

John Von Rosenfelt
Name Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   Interesting & convenient

2. From which lectures or types of lectures did you benefit most?
   Theoretical aspects of MG.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)
   4 sessions in mornings rather heavy, Spread of topics good.
   Little time for discussion at end of papers. Could some formal
   discussion groups have been included in the planning?

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
   1. MG content
   2. Good wide selection of speakers, for making contact
   3. Model for Bristol MG meeting

5. How did the conference contribute to your own professional activities?
   Hope to apply MG methods to Non-Newtonian problems.

Dear Jean, Thanks for a pleasant conference and for help received afterwards, Would you pass on the enclosed?

Frank
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

7. What were the conference's good and bad points?

8. In your opinion, was the conference a success or failure?

9. Would you like to see another MG Conference (who, when and where)?

10. Additional comments:

Name Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
Physical environment was very nice to say the least.

2. From which lectures or types of lectures did you benefit most?
Most interested in those lectures dealing with the practical implementation of MG.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)
Well thought-out and planned. Difficult to see how it could have been much better.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
Yes. A great deal about algebraic multigrid.

5. How did the conference contribute to your own professional activities?
Contact with individuals performing similar work is always helpful.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Basic research & development of numerical methods for CFD. Yes.

7. What were the conference's good and bad points?

Good: location, organization, participants
Bad: Meeting room was too small

8. In your opinion, was the conference a success or failure?

Success.

9. Would you like to see another MG Conference (who, when and where)?

Yes. Who: Whoever is crazy enough to put up with such a hassle.
When: Spring '85
Where: New Orleans, New England ski area, Canada

10. Additional comments:

Name Optional
INTERNATIONAL MULTIGRID CONFERENCE  
APRIL 5-8, 1983  
COPPER MOUNTAIN, COLORADO  
CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator  
Department of Conferences and Institutes  
Rockwell Hall  
Colorado State University  
Fort Collins, CO 80523

1. What do you think about the environment and how it affected the conference?
   
   very pleasant.

2. From which lectures or types of lectures did you benefit most?
   
   got good general background from most of them.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)
   
   good

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
   
   yes I was impressed by the wide applicability of the multigrid approach.

5. How did the conference contribute to your own professional activities?
   
   I intend to use the multigrid approach at the first opportunity.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

   As a computer scientist and consultant I had the chance to talk with people who may be dealing with me professionally in the future, as well as some I am dealing with now.

7. What were the conference's good and bad points?

   The good points were: (a) no simultaneous sessions (b) well organized, punctual presentations (c) proceedings immediately available — bad points: Wednesday night's dinner.

8. In your opinion, was the conference a success or failure?

   Definitely a success.

9. Would you like to see another MG Conference (who, when and where)?

   Yes, same time and place next year.

10. Additional comments:

   Name Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   The atmosphere was relaxed, which was very beneficial.

2. From which lectures or types of lectures did you benefit most?
   AMG and Spectral multigrid.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
   AMG, Spectral multigrid

5. How did the conference contribute to your own professional activities?
   We are attempting to apply multigrid methods to atmospheric science problems.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

practitioner/basic researcher in geophysical fluid dynamics.

7. What were the conference's good and bad points?

Fairly good mix of activities by participants. We need more geophysical fluid dynamicists interested.

8. In your opinion, was the conference a success or failure?

Success!

9. Would you like to see another MG Conference (who, when and where)?

I would very much like to see the multigrid activities at CSU flourish. Perhaps another conference in about 2 years would be helpful for this.

10. Additional comments:

Wayne Schubert
Name Optional
INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
   The setting and facilities were quite pleasant and contributed to the success of the conference.

2. From which lectures or types of lectures did you benefit most?
   I particularly enjoyed the grouping of AMG lectures.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)
   Well-planned

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
   I think I learned the most about AMG. Many of the other talks were too short to really get anything more than a superficial understanding - but this from a non-expert in MG.

5. How did the conference contribute to your own professional activities?
   I made contacts with people working in this area which will be valuable for future MG work.
6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Novice MG er. Yes, I benefitted.

7. What were the conference's good and bad points?

Good ones have already been mentioned above. Bad one was that we were too crowded with those big tables.

8. In your opinion, was the conference a success or failure?

Success, highly successful.

9. Would you like to see another MG Conference (who, when and where)?

Yes, anywhere (who?)

10. Additional comments:

R. Sweet

Name Optional