

Pro Forma CHARTER RENEWAL APPLICATION

This CHARTER RENEWAL APPLICATION applies to the SIAM Activity Group on Analysis of Partial Differential Equations (SIAG/APDE). The SIAM Activity Group (or SIAG) to which this renewal applies was originally formed under the aegis of SIAM on March 26, 2003, by the SIAM Council and December 7, 2002, by the SIAM Board of Trustees with its initial operating period beginning April 1, 2003 and ending March 31, 2005. This SIAG has 185 members as of June 16.

According to its Rules of Procedure, the objectives of the SIAG are to foster activity in the analysis of partial differential equations (PDE) and to enhance communication between analysts, computational scientists and the broad PDE community. Its goals are:

- * To provide a forum where researchers in the area, theoretical and applied, can meet;
- * To be an intellectual home for researchers in the analysis of PDE;
- * To increase conference activity in PDE;
- * To enhance connections between SIAM and the mathematics community.

Its proposed functions will include:

- * Organize a biennial SIAM Conference on PDE. Because of connections between PDE and the topics of many of the other SIAGs, the SIAG/APDE will also solicit opportunities to run joint meetings with other SIAGs and with other periodic SIAM meetings (for example, Combustion, Materials Science or the new SIAG on Nonlinear Waves and Coherent Structures).
- * The SIAG also will organize a minisymposium track on PDE at the SIAM Annual Meeting.
- * Disseminate information. The SIAG will publish a newsletter and maintain a Website to facilitate the exchange of information among its members and other interested parties.

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The SIAG has complemented SIAM's activities and supported its proposed functions. The answers to the questions below indicate how this was accomplished and what the officers propose as the future directions for the SIAG.

1. How is the field covered by the activity group doing? Is it growing, is the focus shifting? What have been the significant advances over the last three years?

The field of analysis of PDE continues to be active, particularly internationally. (For example, an international conference for Djairo De Figuereido took place in Brazil, June 7-11, 2004, and an international conference on hyperbolic problems -- with a significant analysis component -- will be held in Japan, September, 2004.) The gulf between analysis and applications, which this SIAG is designed to bridge, continues to widen, however. For example, a workshop on "Schemes for Multi-Dimensional Conservation Laws" (Hamburg-Harburg, March 2004) had almost no theoretical speakers, and very little connection with analysis was made in the numerical talks.

2. How is the activity group doing? Is it remaining vibrant? Is the size of the SIAG stable or increasing? How is the SIAG keeping up with the changes in the field? How are the broader interests of SIAM reflected in the activities of the SIAG?

The activity group is in the middle of its first cycle, abbreviated because of the change in starting dates. In particular, we do not expect our membership size or composition to stabilize until after the first meeting, scheduled for December 6-8, 2004. A slate of officers for the next charter interval will be chosen then, and it is the intention of the current officers to ensure that young people who represent emerging trends in the field are nominated. It is also intended that the new officers, like the current ones, include people active in SIAM and sympathetic to its interests.

3. Please list conferences/workshops the activity group has sponsored or co-sponsored over the past three years, and give a brief (one sentence or phrase) indication of the success or problems with each.

The first conference will be December 6-8, 2004, in Houston. There are 9 invited speakers (all of our first choices accepted our invitation), and minisymposia and contributed talks have already been submitted, even though the flyer for the meeting has not yet been distributed. We expect an attendance of over 200.

A second conference has been planned, to be joint with the Annual Meeting, Boston, July 2006. The next set of officers will organize this meeting.

At some point a decision will be taken on whether to schedule the meetings in winter or summer, and whether to find a permanent site (as Dynamical Systems has done in Snowbird).

4. Please indicate the number of minisymposia directly organized by the activity group at the last two SIAM Annual Meetings. When did the SIAG last organize a track of minisymposia at an annual meeting?

No, we have not done this, although we intend to do so in future. We were too busy getting set up (we spent some time negotiating with the Nonlinear Waves AG about a joint meeting, which did not work out in the end), and felt we did not yet have enough members to organize a track.

5. Please indicate other activities sponsored by the activity group, to include newsletters, prizes and Web sites. Have each of these been active and successful?

Also not yet done. A possible activity might be to set up and maintain links to conferences and workshops in PDE -- this could be on the AG web page (which right now is rather sparse) or at least linked to it. Choosing a newsletter editor and running an electronic newsletter is something we would like to set up. The time to do this will be at the first business meeting of the AG in December.

6. What activities are planned and proposed for the next period of the charter? Please describe scheduled and suggested future activities in detail.

As answered in 5. and 6.: at the AG meeting, December 2004, we will find volunteers to run or coordinate activities

- organizing a PDE track at the 2005 Annual Meeting
- starting a conference Web page with links
- starting an electronic newsletter

7. How can SIAM help the activity group achieve its goals?

Helping us with the conference has been great. One way in which we needed help was in preparing a couple of grant applications -- one to supplement the registration fee so that we could invite more speakers, and one to help pay for more junior people, postdocs and students to attend. I don't know if either of these applications was submitted, which has been somewhat frustrating. On at least the first proposal (supplementary speakers) the AG officers made the contacts with the sponsoring agency, as requested by SIAM, but there was a breakdown of communication on the actual submission. On the matter of support for young people, SIAM could help by coordinating the efforts of all the AGs to obtain money for this. On the one hand, it should be a high-priority item for granting agencies, and (as we understand it) the application has to come from SIAM headquarters, since these are SIAM conferences. And on the other, it probably helps all the AGs to have a single proposal, in which we all share the proceeds.

8. How can the activity group help SIAM in its general role of promoting applied mathematics and computational science?

Now more than ever, there is an urgency to maintaining the connections between researchers in analysis and application/computation/modeling in PDE. Not only is this conduit necessary to help researchers in PDE identify interesting areas in which theory can develop, it is also vital in helping applied mathematicians who use PDE in modeling and applications to keep in touch with the virtues and limitations of the equations they use, and to ensure that their numerical approximations are valid.

This SIAG requests that the SIAM Council and Board of Trustees renew its charter for a two-year operating period beginning January 1, 2005, and ending December 31, 2006.

Signed

Barbara Keyfitz
SIAG/APDE Chair
June 15, 2004