

THE INTERNET ANALYSIS SEMINAR

Dear Colleagues:

Welcome to the Internet Analysis Seminar for Fall 2011 - Spring 2012. The Internet Analysis Seminar provides a forum for researchers in the areas of complex analysis, function theory, harmonic analysis, and operator theory, to interact and learn from one another, both academically and professionally. The Seminar includes three phases involving Internet lectures, working groups, and a final conference. Each year, a topic in the areas mentioned above will be chosen and an Internet seminar will be developed with corresponding lectures. The Internet Analysis Seminar is generously supported by National Science Foundation DMS # 0955432.

A primary goal of the Seminar is to increase the collaborative learning and mentoring between graduate students, post-doctoral researchers and senior faculty across the country. The Seminar takes the standard dissemination of research results further, providing an open, inclusive setting for junior mathematicians to learn new research concepts and apply them through group projects with more senior researchers.

In Phase I (October - December), approximately 10 weekly, electronic lectures will be provided via a public website. In Phase II (March - May), participants from Phase I will be organized into smaller, diverse groups from various institutions to work on more advanced projects. Phase III consists of a final one-week workshop held in June or July, during which, teams will present their projects and additional lectures will be delivered by leading experts in the field.

The topic of the seminar this year will be Multiparameter Harmonic Analysis. The seminar will attempt to compare and contrast the difference between one parameter and multi-parameter harmonic analysis. It turns out that much of the intuition that one has from one-parameter harmonic analysis can serve as a guide to the corresponding results in multi-parameter harmonic analysis. The key difference between the two different areas of harmonic analysis are the invariance properties of the objects being considered. In one-parameter harmonic analysis the geometric structures that dominate are cubes and balls, while in multi-parameter the structures are rectangles.

The topics that will be covered in the seminar include the following:

- Maximal Functions;
- Calderón–Zygmund Operators;
- Carleson Measures;

Additional more technical topics will appear in the projects. These projects will include Journé's Lemma, multi-parameter paraproducts and multi-parameter commutators. The interested participants should have some real analysis, functional analysis and some familiarity with harmonic analysis since we will use these tools very frequently, and sometimes with out much additional comments about it. All lectures will be written more for the newcomer to the area.

If you are interested in participating please visit the website:

<http://internetanalysisseminar.gatech.edu/>

where you can download the lectures as they are updated (I will attempt to make this happen every Monday). There is also a discussion form there where participants can post questions/comments about the lectures as they go along. To be able to post comments, you will need to register as a user of the site, but this is very easy and straightforward to figure out. The website is (and will be for awhile) in development and some features may change from time to time. If there is something that would be beneficial to the participants, just let me know and I can try to make it happen (post the comment in the forum).

This will likely be a learning experience for both the participants and me as the organizer. So I ask for some patience from all that are involved.

Regards,
Brett Wick