READING SEMINAR IN AUTOMORPHIC FORMS
(MATH 592, SECTION 101)

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Course Website	`http://www.math.ubc.ca/~lior/teaching/1415/592_F14`
Lior's Website	`http://www.math.ubc.ca/~lior/`
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Meeting Time	TBD
Location	TBA

This Fall we will discuss the analytical continuation of Eisenstein series. This is a topic of interest to both number theory students (those interested in modular forms, automorphic forms, and analytic number theory) and to analysis students (anyone interested in spectral theory or analysis on manifolds).

Administrivia.
- The seminar is entirely based on lectures by the participants on a rotating basis.
- Graduate students can take the seminar for credit; if so your grade will be based on your lectures.
- No background in number theory is needed this term.

Proposed Outline.
1. Introduction: the space of lattices, doubly periodic functions and holomorphic forms.
2. Geometry of the hyperbolic plane and the modular surface. $\mathrm{SL}_2(\mathbb{R})$.
3. Maass forms.
4. Eisenstein series in the domain of absolute convergence.
5. Analysis background:
   - (a) Hilbert spaces and self-adjoint operators.
   - (b) The Sobolev embedding theorem.
   - (c) Compact operators and the resolvent.
6. The analytical continuation.
       [further topics as time permits:]
7. The representation-theoretic picture.
8. Hecke operators and Euler products.
9. Rankin–Selberg L-functions.

REFERENCES