Banff International Research Station
for Mathematical Innovation and Discovery

Families of automorphic forms and the trace formula (14w5120)
November 30 – December 5 , 2014

MEALS

*Breakfast (Buffet): 7:00 – 9:30 am, Sally Borden Building, Monday – Friday
*Lunch (Buffet): 11:30 am – 1:30 pm, Sally Borden Building, Monday – Friday
*Dinner (Buffet): 5:30 – 7:30 pm, Sally Borden Building, Sunday – Thursday
Coffee Breaks: As per daily schedule, in the foyer of the TransCanada Pipeline Pavilion (TCPL)
Please remember to scan your meal card at the host/hostess station in the dining room for each meal.

SCHEDULE

Sunday

16:00	Check-in begins (Front Desk – Professional Development Centre - open 24 hours)
17:30-19:30	Buffet Dinner
20:00	Informal gathering in 2nd floor lounge, Corbett Hall
	Beverages and small assortment of snacks are available on a cash honor system.

Monday

7:00-8:45	Breakfast
9:00	Introduction and Welcome by BIRS Station Manager, TCPL
9:30-10:30	Lapid, Untitled
	Coffee Break, TCPL – available from 10:00 am onwards, but must finish by 11:00 am
11:00-11:45	Pfaff, Analytic torsion on locally symmetric spaces
11:30-13:00	Lunch
13:00-14:00	Guided Tour of The Banff Centre; meet in the 2nd floor lounge, Corbett Hall
	Group photo – meet in the lobby of TCPL (photo will be outdoors)
14:15-15:00	Lipnowski, Twisted limit formula for torsion and cyclic base change
	Coffee Break, TCPL – available from 2:00 pm onwards but must finish by 3:30 pm
15:30-16:15	Entin
16:30-17:30	Miller, Results on GL(2) L-Functions: Biases in Coefficients and Gaps Between Zeros
17:30-19:30	Dinner

Tuesday

7:00-9:00	Breakfast
9:30-10:30	Finis, Arthur's trace formula and the limit multiplicity problem
	Coffee Break, TCPL – available from 10:00 am onwards but must finish by 11:00 am
11:00-12:00	Wen-Wei Li, On the endoscopic character relations for Mp(2n)
11:30-13:30	Lunch
13:45-14:45	Matz, Distribution of Hecke eigenvalues for GL(n)
	Coffee Break, TCPL – available from 2:00 pm onwards but must finish by 3:30 pm
15:30-16:15	Andrade
	break

16:30-17:30 Kim
17:30-19:30 Dinner

Wednesday

7:00-9:00   Breakfast
             Free Morning
             No Coffee Break at TCPL
11:30-13:30 Lunch
             Free Afternoon
16:10-17:10 Young, Restrictions of Maass forms on GL_n
17:20-18:05 Kala, Number of self-dual automorphic representations of GL(N) and depth preservation
17:30-19:30 Dinner

Thursday

7:00-9:00   Breakfast
9:15-10:15   Shankar, The average size of the 5-Selmer group of elliptic curves
             Coffee Break, TCPL – available from 10:00 am onwards but must finish by 11:00 am
10:45-11:45 Rubinstein, Moments of zeta functions associated to hyperelliptic curves over finite fields
11:30-13:30 Lunch
1:30-2:15   Asgari, Counting Cusp Forms on Sp(4)
             Coffee Break, TCPL – available from 2:00 pm onwards but must finish by 3:30 pm
3:00-3:45   Lee
             break
16:00-17:00 Knightly, Local equidistribution for families of Siegel modular forms
17:30-19:30 Dinner

Friday

7:00-9:00   Breakfast
9:00   Informal Discussions, as many participants must catch early flights
             Coffee Break, TCPL – available from 10:00 am onwards but must finish by 11:00 am
11:30-13:30 Lunch

Checkout by 12 noon.

** 5-day workshop participants are welcome to use BIRS facilities (BIRS 2nd floor lounge, TCPL and Reading Room) until 3 pm on Friday, although participants are still required to checkout of the guest rooms by 12 noon. **

Abstracts

Wen Wei-Li:
It has been long expected that the representation theories of SO(2n+1) and the metaplectic group Mp(2n) over local fields are intimately related up to L-packets. Such a correspondence has been established by Gan, Savin et al., via the theta lifting. Moreover, the correspondence should satisfy certain character relations which fit into an endoscopic framework for Mp(2n). I will discuss some recent results in this discussion, which are inspired by the works of Adams and Renarnd in the real case.

Michael Rubinstein:

I will discuss conjectures, theorems, and experiments concerning the moments, at the central point, of zeta functions associated to hyperelliptic curves over finite fields of odd characteristic.

Steven J Miller:
This talk is a report on progress made this summer with my REU students on two projects. The first concerns the gaps between zeros of L(s,f) for a primitive holomorphic cusp form f on GL(2). Combining mean value estimates from Montgomery and Vaughan with a method of Ramachandra, we prove a formula for the mixed second moment of derivatives of L(1/2+it,f) and use it to show that there are infinitely many gaps between consecutive zeros of L(s,f) along the critical line that are at least 3 times the average spacing. The second is on lower-order biases in elliptic curve Fourier coefficients. For non-CM families, Michel proved the second moment of the Fourier coefficents is p^2 + O(p^{3/2}). Cohomological arguments show that the lower order terms are of sizes p^3/2, p, p^1/2 and 1. In every case we are able to analyze, the largest lower order term in the second moment expansion that does not average to zero is on average negative. We prove this bias conjecture for several large classes of families, including families with rank and unusual distributions of functional equation signs. We also identify all lower order terms in large classes of families, shedding light on the arithmetic objects controlling these terms. The negative bias in these lower order terms has implications toward the excess rank conjecture and the behavior of zeros near the central point of elliptic curve L-functions.

This work is joint with Owen Barrett, Blake Mackall, Brian McDonald, Christina Rapti, Patrick Ryan, Caroline Turnage-Butterbaugh and Karl Winsor.