

The Analysis Seminar



The seminar meets Wednesdays in WH-100E at 3:30-4:30 p.m. There are refreshments and snacks in WH-102 at 3:15.

The seminar is partly funded as one of Dean's Speaker Series in Harpur College (College of Arts and Sciences) at Binghamton University.

Organizers: [Steven Gindi](#), [Paul Loya](#), [David Renfrew](#), [Xiangjin Xu](#) and [Gang Zhou](#)

Previous talks

- [Fall 2014 to Fall 2019](#)
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Spring 2020

* **January 22nd, Wednesday** (4:00-5:00pm)

Speaker :

Topic:

* **January 29th, Wednesday** (4:00-5:00pm)

Speaker : organizational meeting

Topic: organizational meeting

Abstract: organizational meeting

* **February 5th, Wednesday** (4:00-5:00pm)

Speaker : David Renfrew (Binghamton)

Topic: The circular law

Abstract: I will discuss the eigenvalues of random matrices with i.i.d. entries and show they

converge to the uniform measure on the unit disk.

* **February 12th, Wednesday** (3:30-4:30pm)

Speaker : Guillaume Dubach (CUNY Baruch)

Topic: Words and surfaces

Abstract: Words of random matrices with i.i.d. complex Gaussian entries (a.k.a. complex Ginibre matrices) can be studied using a topological expansion formula, or genus expansion. This results in a generalization of well-known properties of products of i.i.d. complex Ginibre matrices on the one hand, and powers of one Ginibre matrix on the other hand. For instance, the empirical distribution of singular values of any word is shown to converge to a Fuss-Catalan distribution whose parameter only depends on the length of the word. (Joint work with Yuval Peled.)

* **February 19th , Wednesday** (3:40-4:40pm)

Speaker: Indrajit Jana (Temple University)

Topic: CLT for non-Hermitian random band matrices with variance profiles.

Abstract: We show that the fluctuations of the linear eigenvalue statistics of a non-Hermitian random band matrix of bandwidth b_n with a continuous variance profile converges to a Gaussian distribution. We obtain an explicit formula for the variance of the limiting Gaussian distribution, which depends on the test function, and as well as the growth rate of the bandwidth b_n . In particular, if the band matrix is a full matrix i.e., $b_n = n$, the formula is consistent with Rider, and Silverstein (2006). We also compute an explicit formula for the limiting variance even if the bandwidth b_n grows at a slower rate compared to n i.e., $b_n = o(n)$.

* **February 26th , Wednesday** (4:00-5:00pm)

Speaker: Liming Sun (John Hopkins)

Topic: Some convexity theorems of translating solitons in the mean curvature flow

Abstract: I will be talking about the translating solitons (translators) in the mean curvature flow. Convexity theorems of translators play fundamental roles in the classification of them. Spruck and Xiao proved any two dimensional mean convex translator is actually convex. Spruck and I proved a similar convex theorem for higher dimensional translators, namely the 2-convex translating solitons are actually convex. Our theorem implies 2-convex translating solitons have to be the bowl soliton. Our second theorem regards the solutions of the Dirichlet problem for translators in a bounded convex domain. We proved the solutions will be convex under appropriate conditions. This theorem implies the existence of $n-2$ family of locally strictly convex translators in higher dimension. In the end, we will show that our method could be used to establish a convexity theorem for constant mean curvature graph equation.

* **March 4th, Wednesday** (4:00-5:00pm) (**Winter Break**)

Speaker:

Topic:

Abstract:

* **March 11th, Wednesday** (4:00-5:00pm)

Speaker:

Topic:

Abstract:

* **March 18th, Wednesday** (4:00-5:00pm)

Speaker: Gang Zhou

Topic:

Abstract:

* **March 25th, Wednesday** (4:00-5:00pm)

Speaker: Xiangjin Xu

Topic:

Abstract:

* **April 1st, Wednesday** (4:00-5:00pm)

Speaker: Paul Barber

Topic:

Abstract:

* **April 8th, Wednesday** (4:00-5:00pm) (**Spring break**)

Speaker:

Topic:

Abstract:

* **April 15th, Wednesday** (4:00-5:00pm)

Speaker: Xiangjin's visitor(?)

Topic:

Abstract:

* **April 22nd, Wednesday** (4:00-5:00pm)

Speaker: Gang's visitor

Topic:

Abstract:

* **April 29th, Wednesday** (4:00-5:00pm)

Speaker:

Topic:

Abstract:

* **May 6th, Wednesday** (4:00-5:00pm)

Speaker:

Topic:

Abstract: W

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