

Questions for the concluding discussion.

- (1) What was your favorite topic? How would you follow up on it?
For example, topic — determinant processes; follow-up — other matrix ensembles (beside GUE) where eigenvalues make one.
- (2) What was your favorite homework problem?
 - What homework problem you tried but could not do?
 - What problem(s) would you add to the list?
- (3) What would you consider as the three main theorems from the class? *Ginibre, Wigner, and Marchenko-Pastur look like obvious candidates.*
- (4) What particular proof did you find interesting and would like to improve?
- (5) Method of moments or the Stieltjes transform?
- (6) What was an unexpected result that you learned in the class?
For example, the quarter circle law: does not seem to be discussed that often.
- (7) What were you expecting to learn in this class but did not? *For example, applications to wireless communications or to number theory.*
- (8) What unexpected connections between two or more math ideas were you able to make?
- (9) What topic(s) would you present differently?
- (10) Did you try to read any other (text) books on the topic? How did it go?
- (11) If you were to write a research paper on the subject of the class, what would it be about?
- (12) Free probability can potentially be used to create a parallel version of the classical probability theory. Does it make sense to do it? Are there any similar examples when a “parallel theory” can be developed by changing some fundamental definitions? *For example, non-linear expectations lead to yet another “parallel” theory of probability; fuzzy logic, with a smooth modification of the indicator function, can potentially lead to a “fully alternative” mathematics.*