GL(2) SEMINAR

We will follow the recent book *The local Langlands correspondence for GL(2)* by Bushnell and Henniart. To keep us on track, if a lecture is not finished in time then it will be finished in an additional lecture beginning at 7pm on some evening of that week. Each speaker should use their own best judgement as to those aspects of proofs that merit presenting in detail, or as sketch, or left as an exercise (e.g., to read in the book). Feel free to add in illuminating examples or intuitive explanations (if relevant/helpful). *Some full-term speakers are assigned twice* (Nick, Loren, Sam).

Lecture 1, Sept. 11: [Stephen] Motivation from local CFT as GL(1)-case, and §1–2.3 (locally profinite groups, smooth representations, $K$-isotypic decomposition)
Lecture 2, Sept. 18: [Loren] §2.4–2.8 (induction/duality)
Lecture 3, Sept. 25: [Sam] §5–6 (GL(2,$k$) for finite $k$)
Lecture 4, Oct. 2: [Tatiana] §3 (measures, duality/induction)
Lecture 6, Oct. 23: [Ellen] §28.6–29 (representations of Weil group, local CFT review, axioms for $\varepsilon$-factors)
Lecture 7, Oct. 30: [Wansu] §4 (Hecke algebras)
Lecture 8, Nov. 6: [Kevin] §7 (structure of and measures on GL(2,$F$) for local $F$)
Lecture 9, Nov. 13: [Loren] §8–9.5 (mirroric representations, basics of Jacquet modules)
Lecture 10, Nov. 20: [Sam] §9.6–10 (irreducible non-cuspidal reps, cuspidals via matrix coefficients)
Lecture 11, Nov. 27: [Nick] §11 (compact induction and irreducible cuspidal representations)
Lecture 12, Dec. 4: [Ellen] §32 (Weil–Deligne group and representations)
Lecture 13, Dec. 11: [Brian] §30 (existence of local $\varepsilon$-factors)

-------- Holiday break --------

Lecture 14, Jan. 10: [Brian] §12 (chain orders)
Lecture 16, Jan. 24: [Sam] §14.3–14.5, §17.1–17.3 (fundamental strata and irreducible cuspidals)
Lecture 17, Jan. 31: [Marty] §15.1–§15.5, §16.1–§16.3 (irred. cuspidal reps and cuspidal types)
Lecture 18, Feb. 7: [Stephen] §15.6–15.9, §16.4 (structure of cuspidal types)
Lecture 19, Feb. 14: [Tatiana] §17.4–§17.10 (square-integrable representations)
Lecture 20, Feb. 21: [Loren] §24 (local GL(2) functional equation, proof in cuspidal case)
Lecture 21, March 6: [Stephen] §25 ($\varepsilon$-factor formula for GL(2) in cuspidal case)
Lecture 22, March 13: [Brian] §26, §31 (functional equation and $\varepsilon$-factor in non-cuspidal case, WD-reps)
Lecture 23, March 20: [Marty] §27 (converse theorem, granting lemma in §27.8 that needs §19–22)
Lecture 24, March 27: [Loren] §18, §19, §22 (parameterization of irreducible cuspidals)
Lecture 25, April 3: [Nick] §20–21 (tame parameterization theorem)
Lecture 26, April 10: [Stephen] §33–34, but stop at statement of tame Langlands correspondence
Lecture 27, April 17: [Wansu] Proof of tame correspondence and §35 ($\ell$-adic correspondence)