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Winter and spring term 2022

## Learning seminar on automorphic forms

The plan is to cover chapters 1 and 2 of [Bum98], and the first sections of chapter 3. Most of the talks correspond to one section of [Bum98].

**Talk 1.** (November 16 at IMUB; Eloi Torrents). Weil's twisting theorem, §1.5.

**Talk 2.** (November 23 at IMUB; Francesc Fité). The Rankin-Selberg method, §1.6.

**Talk 3.** (November 30 at IMUB; Xavier Guitart). Hecke characters, §1.7.

**Talk 4.** (December 21 at IMUB; Marc Masdeu). Maass forms, §1.9.

**Talk 5.** (January 11 at IMUB; Santiago Molina). Hilbert modular forms and base change, §1.7 and beginning of §1.10.

**Talk 6.** (January 18 at B1; Armando Gutiérrez). Basic Lie theory, §2.2.

**Talk 7.** (January 25 at IMUB; Francesc Fité). Semisimplicity of the regular representation on  $L^2(\Gamma \backslash G)$ , first part of §2.3.

**Talk 8.** (February 28 at B6; Xavier Guitart).  $(\mathfrak{g}, K)$ -modules, §2.5. See also [Wel97].

**Talk 9.** (March 15 at IMUB; Santi Molina). Basic representation theory, §2.4.

**Talk 10.** (March 23 at IMUB; Santi Molina). Last week continued.

**Talk 11.** (April 6 at IMUB; Santi Molina). Unitarity and intertwining integrals, §2.6.

**Talk 12.** (May 19 at B6; Ignasi Sánchez). Tate's thesis. Local case, §3.1.

**Talk 13.** (May 26 at B6; Enric Florit). Tate's thesis. Global case, §3.1.

## References

[Bum98] D. Bump, *Automorphic forms and representations*, Cambridge Studies in Advanced Mathematics, 1998.

- [Wel97] M. Welleda Baldoni, , Proceedings of Symposia in Pure Mathematics, Volume 61 (1997), p.p. 61–72.