9:00 -9:30 Arrival and self registration

The basic objects
First series of lectures:

Mo 9:30 - 10:30 Lecture 1: Basic facts for reductive groups (examples) The spaces, examples . The interpretation of $X = G(\mathbb{R})/K_\infty$ as space of Cartan involutions. Arithmetic groups, the locally symmetric spaces (Schwermer)

10:30-11:00 Coffee break

Mo 11:00 - 12:00 Lecture 2: The sheaves, interpretation as "orbilocal" systems, the cohomology groups, cohomology with compact supports. The fundamental exact sequence in the case $\mathrm{Sl}_2(\mathbb{Z})$ (Harder/Kaiser)

12:00-14:00 Lunch break

Mo 14-15:00 Lecture 3: Definition of the action of the Hecke algebra on the integral cohomology. (Example $\mathrm{GL}_n(\mathbb{Z})$) Continuation of the case $\mathrm{GL}_2(\mathbb{Z})$ (Chap.II 2.1.3 and 2.3.7 and the Manin-Drinfeld principle. The denominator of the Eisenstein class. (Harder/Kaiser)

15:00-15:30 Coffee break

15:30-16:00 Lecture 3 continued

Di :9-10:30 Lecture 4 :The Satake isomorphism, an irreducible module for the local unramified Hecke algebra yields semi simple conjugacy class in the dual group. (Kaiser)

10:30-11:00 Coffee break and group photo

Di: 11-12:00 Lecture 5: Borel-Serre compactification, reduction theory, the spectral sequence for the cohomology of the boundary. (Harder)

12:00-14:00 Lunch break

Di: 14-15:00 Lecture 6. The integral and the rational cohomology groups as Hecke-modules. The semi-simplicity of the inner cohomology. Tensor product of local modules. The (cohomological) L-functions $L^{coh}(\pi_f, r, s) = \prod_p L_p^{coh}(\pi_f, r, s)$
(Harder/Kaiser)

15:00-15:30 Coffee break

15:30-16:00 Lecture 6 continued

Analytic methods, automorphic forms

Second series of lectures:

Mi: 9:00 10:30 Lecture 1: (Proposition 4.1 in Chap III):

$$\mathrm{Hom}_{K_\infty}(\Lambda^\bullet(\mathfrak{g}/\mathfrak{k}), \mathcal{C}_\infty(G(\mathbb{Q})\backslash G(\mathbb{A})/K_f) \otimes \mathcal{M}_\lambda \otimes \mathbb{C}) \xrightarrow{\sim} \Omega^\bullet(\mathcal{S}^G_{K_f}, \tilde{\mathcal{M}}_\lambda),$$

The representation theoretic de-Rham complex.

10:30-11:00 Coffee break

Mi: 11-12 Lecture 2 : Representation theoretic Hodge theory (Theorem on p. 69 in Chap III) (Eichler-Shimura isomorphism) "Cuspidal" cohomology. (Harder/Schwermer)

Mi: 12:00-13:00 Lecture 3: Whittaker models, analytic properties and functional equations of some L-functions. Elementary computation for Δ. (Kaiser)

Free Afternoon

Do : 9 -10.30 Lecture 4 Eisenstein cohomology (Schwermer)

10:30-11:00 Coffee break

Do: 11:00 - 12:00 Lecture 5: Eisenstein cohomology continued . (Arithmetic implications: Rationality for special values, denominators predicted by the divisibility of these values by prime (powers)) (Harder/Schwermer)

12:00-14:00 Lunch break

Galois-representations attached to modular forms

Third series of lectures:

Do : 14:00 -15:00 Lecture 1 Shimura varieties, modular interpretation of $\Gamma\backslash X$ as parameter space for elliptic curves (abelian varieties). The coefficient systems as "motivic sheaves". (Hellmann/Scholze)

15:00-15:30 Coffee break

15:30-16:00 Lecture 1 continued

Fr. 9-10 Compatible systems of ℓ-adic representations (Hellmann/Scholze)

10:30-11:00 Coffee break

Fr. 11:00 -12 Eigenforms and Galois representations. "Automorphic L-function = Motivic L-function". (Hellmann/Scholze)

12:00-14:00 Lunch break

Fr. 14-15:30 Divisibility of special values and the structure of the Galois group . (???)