Online mini-workshop series on the geometric realization

of *p*-adic local Langlands

Organizers: Yiwen Ding, Yongquan Hu, and Liang Xiao

This mini-workshop series on p-adic local Langlands mainly focuses on the series works of Colmez{Dospenescu{Niziol on the étale cohomology of Drinfeld towers and p-adic period domains. This has deep relation to the p-adic local Langlands correspondence. We meet twice a week for two 90-minutes lectures each day.

**Workshop Schedule:**

|  |  |  |  |
| --- | --- | --- | --- |
| Time | Speaker | Content | ZOOM |
| 7/29  2:30-4pm | Liang Xiao | Talk 1: Summarize the main results.  Summarize the main results of Colmez-Dospinescu-Niziol's series of papers [CDN1, CDN2, CDN3, CDHN]. Discuss the main techniques involved in each of the paper and improve- ments/adaptability along the development of these papers. | ID:466 356 2952  Password:mcm0729 |
| 7/29  4-5:30pm | Liang Xiao | Talk 2: Summarize [CDN1]. Since we have already learned  studied this paper before, we give a quick summary of the content as well as the proof of involved in this paper. |
| 7/31  2:30-4pm | Ruochuan Liu | Talk 3: Syntomic cohomology I. Following [CDN2, §3] to discuss syntomic cohomology (which is not too much dierent from usual rigid cohomology) | ID:466 356 2952  Password:mcm0731 |
| 7/31  4-5:30pm | Yichao Tian | Talk 4: Syntomic cohomology II. Cover [CDN2, §4]. |
| 8/5  2:30-4pm | Haoran Wang | Talk 5: Pro-étale cohomology of Drinfeld half-space. Following [CDN2, §5] to compute the pro-étale cohomology of Drinfeld half-space. | ID:466 356 2952  Password:mcm0805 |
| 8/5  4-5:30pm | Aditya Karnataki | Talk 6: Étale cohomology of Drinfeld half-space. Following [CDN2, §6,7] to compute the étale cohomology of Drin-feld half-space. |
| 8/7  2:30-4pm | Longke Tang | Talk 7: Quick summary of -cohomology of Bhatt-Morrow-Scholze Cover [CDN3, §2,3], give an introduction to Ainf-cohomology. | ID:466 356 2952  Password:mcm0807 |
| 8/7  4-5:30pm | Hui Gao | Talk 8: Ainf-cohomology of Drinfeld symmetric spaces. Cover [CDN3, §4,5]. |
| 8/12  2:30-4pm | Yiwen Ding | Talk 9: Representation theoretic background for generalized Steinberg representations Cover [CDHN, §2] | ID:466 356 2952  Password:mcm0812 |
| 8/12  4-5:30pm | Xu Shen | Talk 10: *p*-adic period domains. Cover [CDHN, §3,4]. |
| 8/14  2:30-4pm | Liang Xiao | Talk 11: Geometry of the complements of period domains Cover [CDHN, §5 and Appendix] | ID:466 356 2952  Password:mcm0814 |
| 8/14  4-5:30pm | Gabriel Dospinescu | Talk 12: Main results on the p-adic étale cohomology of period domains. Cover [CDHN, §6]. |

References

[CDN1] P. Colmez, G. Dospinescu, and W. Niziol, Cohomologie *p*-adique de la tour de Drinfeld: le cas de la dimension 1, J. AMS 33 (2020), 311|362.

[CDN2] P. Colmez, G. Dospinescu, and W. Niziol, Cohomology of *p*-adic Stein spaces, Invent. Math. 219 (2020), 873|985.

[CDN3] P. Colmez, G. Dospinescu, and W. Niziol, Integral *p*-adic étale cohomology of Drinfeld symmetric spaces, arXiv:1905.11495.

[CDHN] P. Colmez, G. Dospinescu, J. Hauseux, and W. Niziol, *p*-adic etale cohomology of period domains, arXiv:2001.06809.