



## Syllabus

### *Fundamental lemmas and Fourier transform - 80995*

*Last update 30-07-2020*

*HU Credits:* 2

*Degree/Cycle:* 2nd degree (Master)

*Responsible Department:* Mathematics

*Academic year:* 0

*Semester:* 1st Semester

*Teaching Languages:* English

*Campus:* E. Safra

*Course/Module Coordinator:* Dr. Ari Shnidman

*Coordinator Email:* [ariel.shnidman@mail.huji.ac.il](mailto:ariel.shnidman@mail.huji.ac.il)

*Coordinator Office Hours:*

*Teaching Staff:*

Dr. Schneidman Ari

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Course/Module description:

A *\*fundamental lemma\** relates *p*-adic integrals on two different groups. An *\*arithmetic\** fundamental lemma relates derivatives of *p*-adic integrals to arithmetic intersection numbers in a moduli space of *p*-divisible groups. We survey some recent pretty examples of each type, especially the works of Beuzart-Plessis, Li-Zhang, and Zhang. We'll also sketch how these results lead to special value formulas for automorphic L-functions (e.g. the Gan-Gross-Prasad conjecture) and Eisenstein series (the Siegel-Weil formula). The common thread in these new results is the Weil representation/Fourier transform.

References:

<https://arxiv.org/pdf/1901.02653.pdf>

<https://arxiv.org/pdf/1908.01701.pdf>

<https://arxiv.org/pdf/1909.02697.pdf>

Course/Module aims:

Learning outcomes - On successful completion of this module, students should be able to:

Attendance requirements(%):

Teaching arrangement and method of instruction:

Course/Module Content:

Required Reading:

Additional Reading Material:

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Course/Module evaluation:

End of year written/oral examination 0 %

Presentation 0 %

Participation in Tutorials 0 %

Project work 0 %

Assignments 0 %

Reports 0 %

Research project 0 %

Quizzes 0 %

Other 100 %

Additional information: