Spring 2022 Ellis R. Kolchin Memorial Lecture

Wednesday, April 20, 2022 from 1:10 - 2:10PM
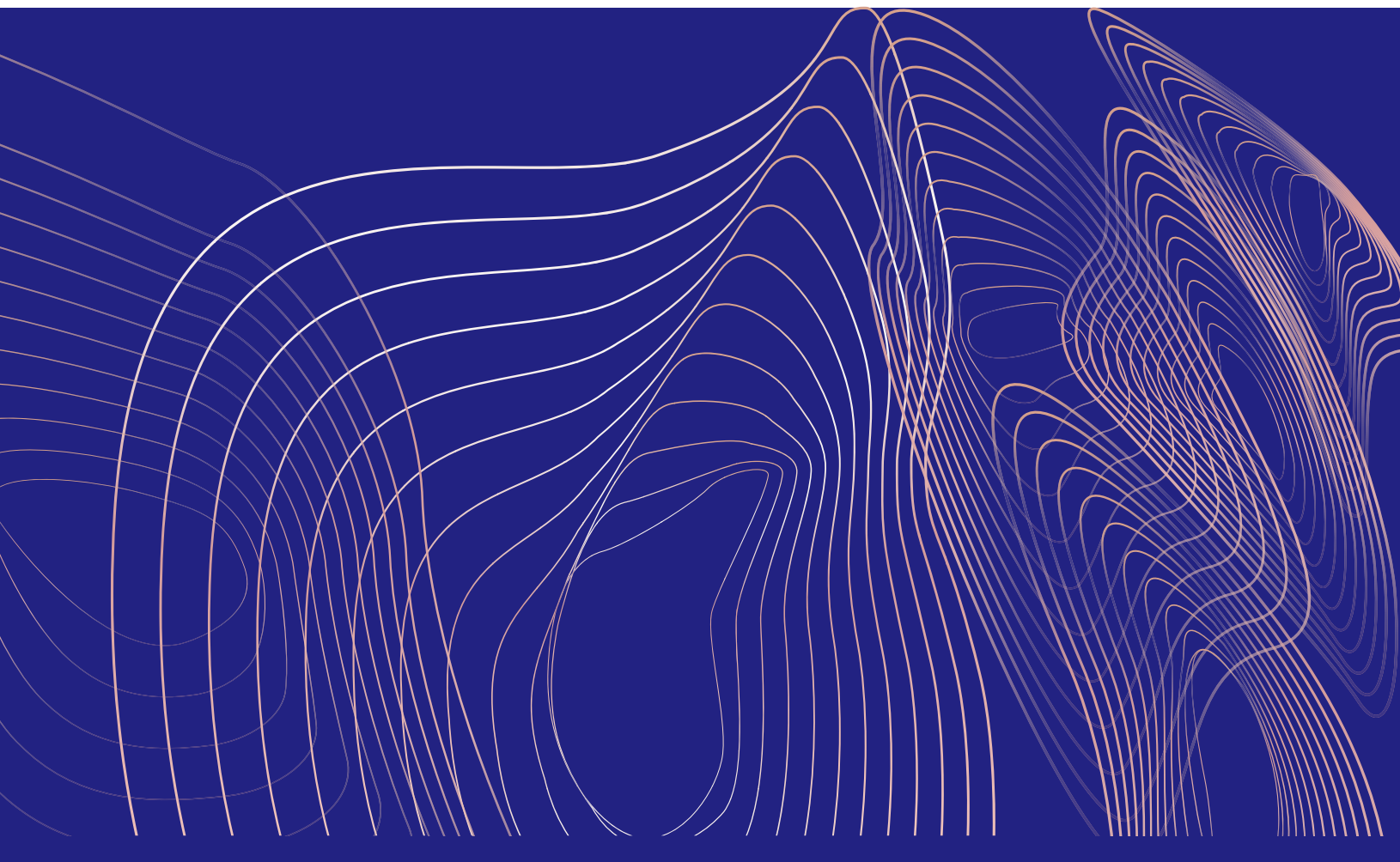## Mathematics Hall, room 520

Professor Akshay Venkatesh (Institute for Advanced Studies)

"Symplectic Reidemeister torsion and symplectic L-functions"

I will start with a beautiful theorem of W.Meyer about the topology of surfaces. It relates the signature of local systems to the topology of the group of symplectic real matrices. I will then explain a new theorem about 3-manifolds that controls how this situation varies in a one-dimensional family. Finally I will get to the main point: an analogous theorem in number theory about symplectic L-functions.

These theorems seem to be analogous to phenomena that occur in quantization, although the precise relationship is not clear. Another interesting point is that the topological theorem enters into the proof of the arithmetic one. I will treat L-functions as a "black box" so no familiarity with them will be needed. Joint work with Amina Abdurrahman.

Time & Location
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Mathematics Hall, room 520
2990 Broadway
New York, N.Y. 10027

Tea will be served at 4 pm in room 508, Mathematics Hall