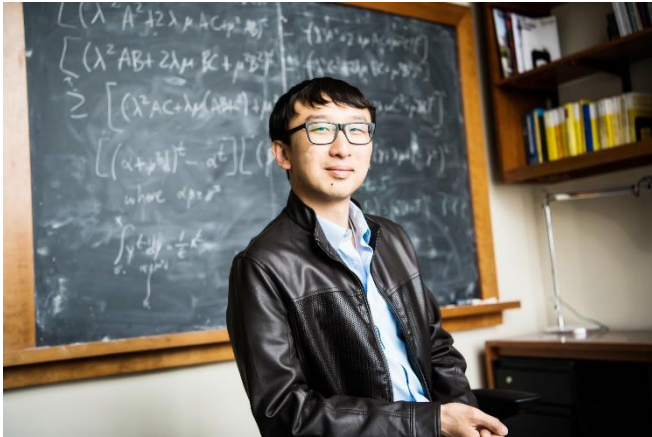




HARVARD UNIVERSITY  
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# Mathematical Picture Language Seminar



**Tuesday, April 2**

**4:30 p.m. Boston time**

**Jefferson 256**

**Yufei Zhao**

MIT

## Equiangular lines and eigenvalue multiplicity

**Abstract:** Equiangular lines are configurations of lines in  $n$ -dimensional space, all passing through the origin, that pairwise make the same angle. Fix an angle, in high dimensions, what is the maximum number of equiangular lines pairwise separated by the given angle? I will discuss the solution to this problem. A key step is in showing that a connected bounded degree graph has sublinear second eigenvalue multiplicity.

These results prompted further investigations into spherical codes and spectral graph theory. I will highlight some ongoing work and open problems.



Zoom QR Code & Link:

<https://harvard.zoom.us/j/779283357?pwd=MitXVm1pYUJJVzZqT3lwV2pCT1ZUQTog>

Passcode: 657361

<https://mathpicture.fas.harvard.edu/seminar>