

1113-05-241      **Peter Csikvari\*** ([peter.csikvari@gmail.com](mailto:peter.csikvari@gmail.com)), Ames street 40, Office E18-378, Cambridge, MA 02139. *Tree-walks and spectral entropy.*

In this talk I will survey some inequalities about the number of homomorphisms of a tree into a graph. One of the most surprising inequality is the following: if  $T_m$  is a tree on  $m$  vertices then for any graph  $G$  we have

$$\text{hom}(T_m, G) \geq \exp(H_\lambda(G))\lambda^{m-1},$$

where  $\lambda$  is the largest eigenvalue of the graph  $G$ ,  $H_\lambda(G)$  is a quantity which we call spectral entropy. I will give many applications of this result together with some open problems.

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