

Asymptotic Group Theory Efim Zelmanov University of California San Diego

When and where

Department of Mathematics and Statistics · The University of Toledo SHOEMAKER LECTURE SERIES April 26 · 4-5PM · FH 2100

About the talk

The talk is a very general survey of Asymptotic Group Theory. We will focus on growth of groups, growth of graphs and links to Combinatorics and Number Theory.

About the speaker

Fields Medal (1994) for his work in the field of abstract algebra and group theory, in particular for his solution of the restricted Burnside problem.

Zelmanov studied Mathematics at the State University in Novosibirsk, Russia, (Master of Science 1977, Ph.D. 1981) and worked afterwards as a Researcher at the Institute for Mathematics of the Soviet (later, Russian) Academy of Sciences (Novosibirsk), which he is still member of. In 1990 he emigrated to the USA to become a professor at the University of Wisconsin Madison. In 1994 he went to the University of Chicago, and between 1995 and 2002 taught at Yale University. Since 2002, Efim Zelmanov has held the Rita L. Atkinson Chair in Mathematics at the University of California, San Diego.

Mathematics: Art or Science?

$\overline{sinB} e^{i\pi} + 1 = 0$ $\overline{A} \cdot (B + \overline{C}) = y = Kx + m$	
$ + \chi = \frac{1}{2} \int_{c}^{a_1} \int_{c}^{a_2} \int_{c}^{a_3} \int_{c}^{a_4} \int_{c}^{a_5} \int$	
$\lim_{x \to \infty} \frac{\sin x}{x} = 1 \text{AP} \qquad \qquad f(x) = \frac{1}{\sigma \sqrt{2\pi}} \exp\left(-\frac{(x-\mu)^2}{2\sigma^2}\right) \qquad \qquad U = \int_{\pi}^{b} \frac{f^2}{\sigma^2} dx$	
+ 6, C2 V2	
$+b_2c_2$ $\sigma \sinh(x) = c_2$	
$i=\sqrt{-1} \qquad o \qquad $	
$e^{nt} = \cos x + L\sin x$ $\int A dA = n+1$	
$A_{n}^{k} = \frac{n!}{(n-k)!} \qquad \qquad$	500
$\lim_{n \to \infty} \alpha^{\psi(m)} \equiv 1 \pmod{n}$ $\log(ab) = \log a + \log$	
- A h= D.tgd AY	
S=tabsind	
$y = x^2$	
$\cos 2d = 2\cos d - 1$	
$= \int_{-\infty}^{k} f^{(n)}(\alpha) (\alpha) (\alpha - \alpha) \int_{-\infty}^{\infty} \int_{-\infty}$	
$\sum_{n=0}^{k} \frac{f^{(n)}(\alpha)}{n!} (x-\alpha)^n e^{X} \cos X = \operatorname{Re}\left\{e^{iX}\right\} \chi! = 1$	MARK MAN

Join a general lecture that explores both the artistic and scientific values of math. You'll learn how some groundbreaking applications in the field started out as pure aesthetics.

Friday, April 26 7-8 p.m.

UTOLEDO MAIN CAMPUS

Enjoy light refreshments served before the lecture.

This event is free and open to the public.

Dr. Efim Zelmanov is a Russian-American mathematician world-renowned for his work on combinatorial problems in non-associative algebra and group theory, including his solution of the restricted Burnside problem. In 1994, he was awarded the Fields Medal, one of the highest honors in mathematics.



Supported by the Richard Shoemaker Fund

Dr. Efim Zelmanov Fields Medal Winner



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