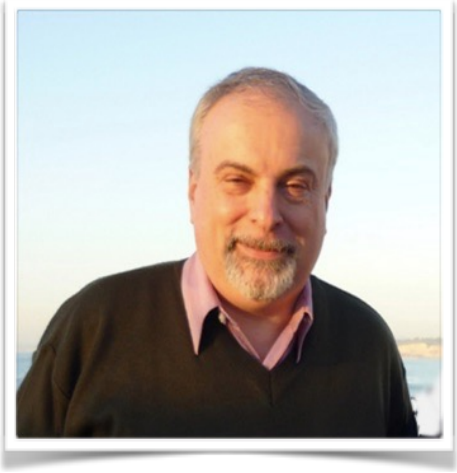

Colloquium Talk

Mikhail Volkov is a Professor at the Institute of Mathematics and Computer Science of Ural Federal University (Ekaterinburg, Russia). He is the Ada Peluso Visiting Professor of Mathematics at Hunter College in Spring 2016.

Main areas of research: Algebra, Automata, Combinatorics on Words, Formal Languages, Computational Complexity.

Published over 130 journal articles and gave more than 60 plenary talks at the International Algebraic Conferences .

Received best paper awards at the 12th and the 17th International Conferences on Implementation and Application of Automata (CIAA 2007, CIAA 2012).

Vice President of the Russian Chapter of the European Association of Theoretical Computer Science. Executive Editor of the journal Semigroup Forum (Springer). Editor of the International Journal of Algebra and Computation (World Scientific).

Synchronizing finite automata:

a problem everyone can understand but nobody can solve (so far).

Abstract: This talk is devoted to a mathematical problem that was frequently asked by both theoreticians and practitioners in many areas of science and engineering. The problem, usually referred to as the synchronization problem, can be roughly described as the task of determining the simplest way to restore control over a device whose current state is not known:– think of a satellite which loops around the Moon and cannot be controlled from the Earth while "behind" the Moon. While easy to understand and practically important, the synchronization problem turns out to be surprisingly hard to solve even for finite automata that constitute the simplest mathematical model of real-world devices. This combination of transparency, usefulness and unexpected difficulty should make the talk interesting for a wide audience.

February 17th 2016, 1:00- 2:00 PM, Room 920 HE

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