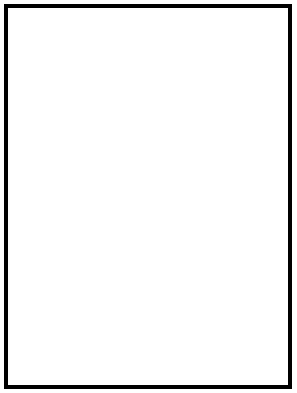
The CMS Prize Lectureship for Distinguished Research by Women in Mathematics was instituted in 1995 in recognition of outstanding research by a female mathematician. This award is presented in conjunction with the Canadian Mathematical Society's Summer Meeting.

Le prix de conférence SMC pour la recherche féminine, créé en 1995, rend hommage aux mathématiciennes qui se sont distinguées par leur apport exceptionnel à la recherche en mathématiques. Elle est présentée dans le cadre de la réunion d'été de la Société mathématique du Canada.

RECIPIENTS / RÉCIPIENDAIRES

1995	Nancy Reid
1996	Olga Kharlampovich

The 2nd Krieger-Nelson Prize Lecture
Le 2ème Prix de conférence Krieger-Nelson



Olga Kharlampovich
McGill University

1996 CMS Summer Meeting
Réunion d'été 1996 de la SMC
Calgary, Alberta
June / juin 1996

BIOGRAPHICAL INFORMATION
DONNÉES BIOGRAPHIQUES

Olga Kharlampovich graduated from the Urals State University (Ekaterinburg, Russia) in 1980. For her undergraduate work, (solution of the Novikov-Adian's problem) she was awarded a gold medal from the Soviet Academy of Sciences. One such medal is awarded every two years to the best mathematics student in the Soviet Union.

She got her Ph.D. under the supervision of Professor Shevrin in 1984 from the Leningrad University and Habilitation from the Steklov Institute, Moscow, 1990. Professor Kharlampovich has been at McGill University since 1990. Her field of research is combinatorial and geometric group theory.

Olga Kharlampovich a terminé ses études à l'Université de l'Oural (Ekaterinburg, Russie) en 1980. Ses travaux de premier cycle (résolution du problème de Novikov-Adian) lui ont valu la médaille d'or de l'Académie des sciences de l'URSS, décernée tous les deux ans au meilleur étudiant en mathématiques de l'Union soviétique.

M^{me} Kharlampovich a poursuivi ses études à l'Université de Léningrad sous la direction du professeur Shervin et a obtenu son Ph.D. en 1984. Elle a obtenu son "Habilitation" de l'Institut Steklov, à Moscou, en 1990 et travaille depuis à l'Université McGill. En recherche, elle s'intéresse à la théorie des groupements géométriques et combinatoires.

Equations in Groups

Olga Kharlampovich

Systems of equations over a group have been widely studied. I will describe the "algebraic geometry" approach to the study of equations over a torsion-free hyperbolic group (in particular over a free group) and will prove the analogue of Hilbert's Nullstellensatz for quadratic equations (with few exceptions).

The problem of deciding if a system of equations in a group has a solution is a generalization of the word and conjugacy problems. I will prove that this problem is algorithmically decidable for the Q-completion of a torsion-free hyperbolic group.

CITATION

Kharlampovich, while still an undergraduate, gave a negative answer to the Kargapolov-Mal'tsev question about the algorithmic unsolvability of the universal theory of the class of finite nilpotent groups. She then solved the long-standing problem of Novikov and Adian by exhibiting a finitely presented group that satisfied a non-trivial identity and had an unsolvable word problem. Since then she has continued her investigation of the connections between algebraic properties and algorithmic properties of groups and of Lie algebras. She has a fruitful collaboration with M. Sapir, she has carried out important work in the combinatorial theory of groups and Lie algebras.