

# Remembering Victor

An Armenian  
Mathematician:



Victor Arzumanian  
(1949-2019)

# Two or three things I know of him

- Childhood in Baku.
- PhD at Leningrad State University under the direction of Anatoly Vershik, entitled “Structure and Representations of Involutive Algebras associated with Semigroups of Endomorphisms” defended in 1979.
- Researcher at the Institute of Mathematics of the National Academy of Sciences of Armenia since 1980.

# His research interests

## Mathematical Physics

- Operator algebras and dynamical systems

## Functional Analysis

- Uniform algebras
- Statistical mechanics and probability theory

# ALGOP, Orléans July 1992



# Irreversible dynamical systems

Victor is one of the first researchers who associated involutive operator algebras to irreversible dynamical systems such as semigroups of endomorphisms:

Arzumanian, V. A.; Vershik, A. M. [Star algebras associated with endomorphisms](#). *Operator algebras and group representations, Vol. I (Neptun, 1980)*, 17–27, *Monogr. Stud. Math.*, 17, Pitman, Boston, MA, 1984.

and to inverse semigroups:

Arzumanjan, V. A. [\\*-representations of inverse semigroups](#) (Russian) *Izv. Akad. Nauk Armjan. SSR Ser. Mat.* 13 (1978), no. 2, 107–113, 171.

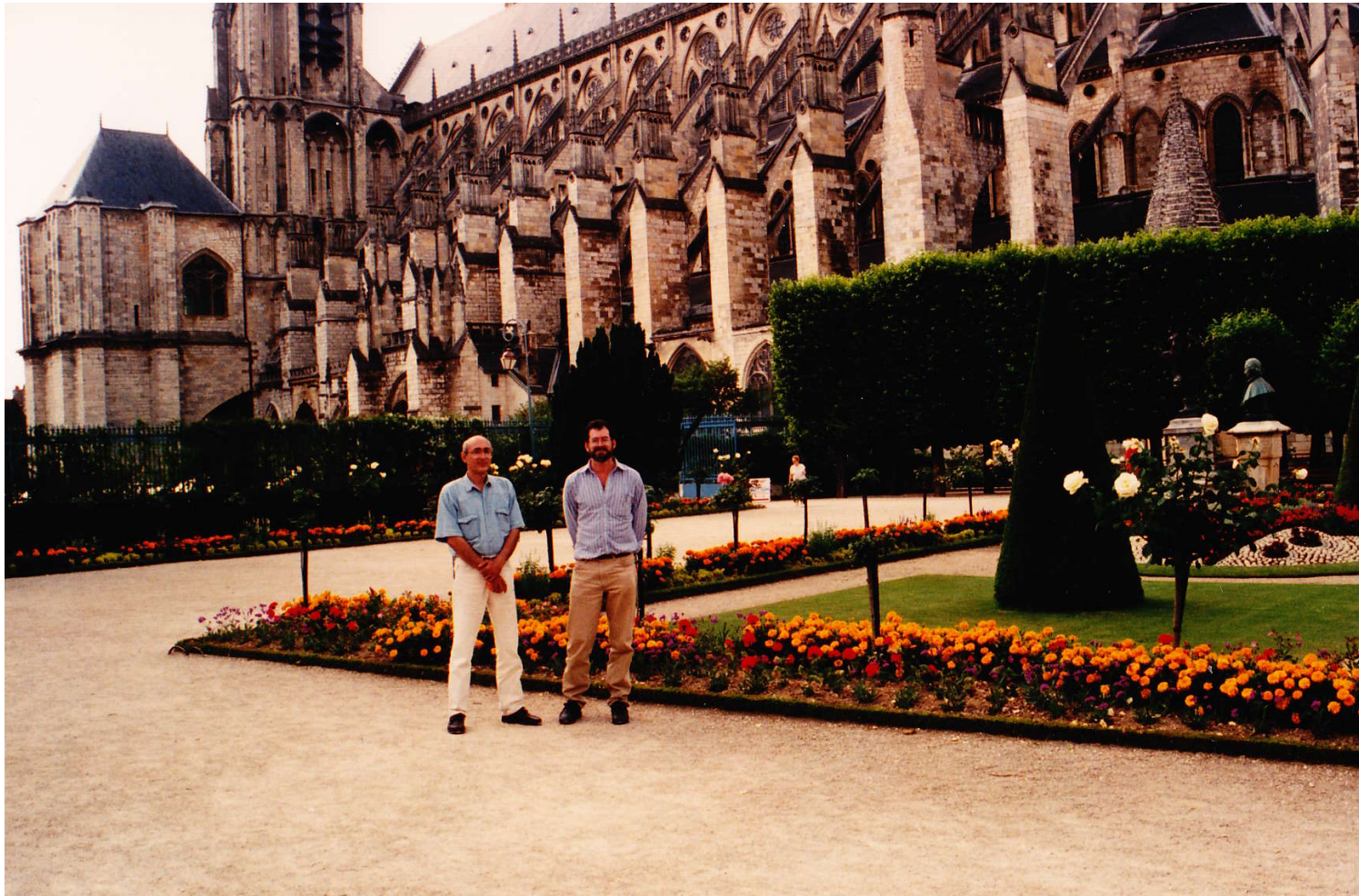
# Victor in Orléans

Since his work had very close connections with mine, I wanted to discuss further with him. I am grateful to the University of Orléans for offering him a one-month visiting professor position, which he held in June 1996.

June 1996



# Bourges, June 1996



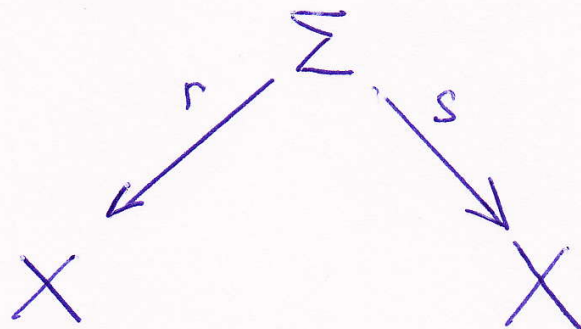


# Our joint paper

Many constructions Victor and I had considered could be put in the same bag: pseudogroups and groupoids of germs. We gave a particular attention to polymorphisms, which Vershik had introduced in the measure theoretical setting:

V. Arzumanian and J. Renault, *Examples of pseudogroups and their  $C^*$ -algebras*, in Operator Algebras and Quantum Field Theory, International Press (1997), 93-104.

# polymorphisms



Example:  $\Sigma = X = \mathbb{S}^1$ ,  $r(z) = z^2$ ,  $s(z) = z^3$

Furstenberg's  $\times 2 \times 3$  conjecture: any invariant, ergodic, Borel probability measure is either atomic or the Lebesgue measure

# The math-phy conferences

Since 1982, Victor and his colleagues [Boris Nahapetian](#) and [Suren Poghosyan](#) organize one of the most important conferences in mathematical physics. Among the participants were many well-known scientists, such as S. Albeverio, R. Dobrushin, G. Dell'Antonio, V. Malyshev, R. Minlos, S. Miracle-Sole, A. Polyakov, Y. Sinai, A. Vershik and others.

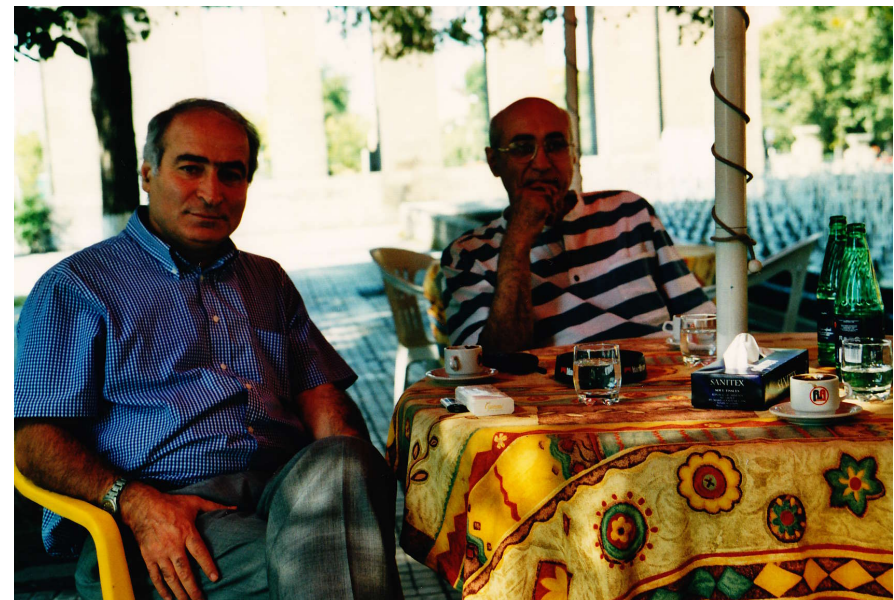
# Tsaghkadzor 2002





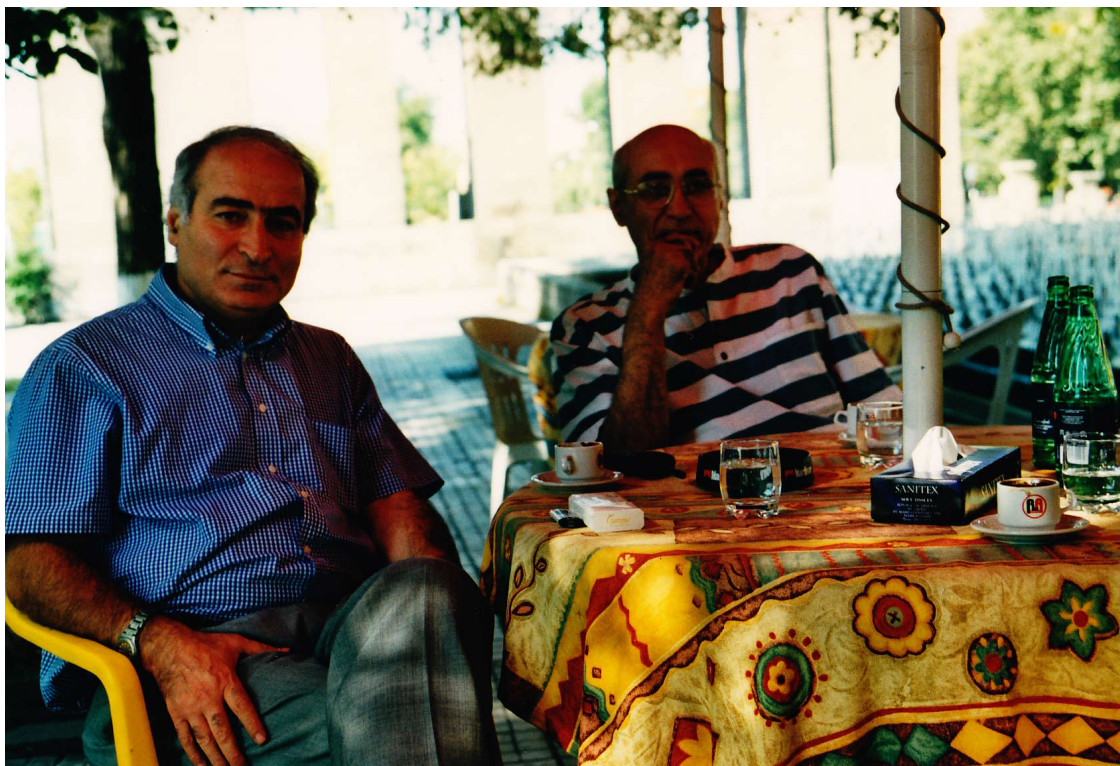


# Yerevan 2002









# Yerevan 2016







# Armenia 2016





