Irene Sharaya (1962–2015)

Sergey P. Shary

Institute of Computational Technologies
and Novosibirsk State University
Novosibirsk, Russia

shary@ict.nsc.ru

My beloved wife Irene passed away on January 10, 2015, as the result of breast cancer complications. Irene was an excellent wife and a perfect mother, while a very modest woman. We have three children and two grandchildren (at the moment), but many can remember Irene as a fine mathematician and co-organizer of the 15th GAMM-IMACS International Symposium SCAN'2012 in Novosibirsk — http://conf.nsc.ru/scan2012.

We graduated jointly from the Mathematics Department at Novosibirsk University (NSU) in 1985, and in 1996 she decided to join me in research on interval analysis: the geometrical features and novelty of that field were highly attractive to her.

As a researcher, she had been working literally until her last days and hours. She was feeling the approach of death and tried to finalize and hand over her results and codes, everything she had done, to me.

The best monument to Irene will probably be her results, algorithms, and software. She obtained several outstanding results related to AE-solutions and, more generally, quantifier solutions for interval linear systems of equations and inequalities (see e.g. [1, 2, 3, 4]). Some of her results will still be published. Of special interest is her "boundary intervals method" for visualization of polyhedral solution sets [5]. It is readily applicable to interval linear systems, and Irene presented these results at the symposium SCAN'2012; see `http://conf.nsc.ru/files/conferences/scan2012/142985/Sharaya-scan2012.pdf`

Her software packages `IntLinIncXX` and `lineq2` based on the boundary intervals method are the world's best visualization codes for the solution sets to both interval and non-interval linear systems of relations (equations and inequalities). They are freely available at `http://www.nsc.ru/interval/sharaya/index.html#codes`

For 30 years, we have been living with Irene at one ...

References

[1] I. A. Sharaya. On maximal inner estimation of the solution sets of linear systems with interval parameters. *Reliable Computing*, 7 (2001), No. 5, pp. 409–424. DOI: 10.1023/A:1011428127620

[2] I. A. Sharaya. On unbounded tolerable solution sets. *Reliable Computing*, 11 (2005), No. 5, pp. 425–432. DOI: 10.1007/s11155-005-0049-9

[3] I. A. Sharaya, S. P. Shary. Tolerable solution set for interval linear systems with constraints on coefficients. *Reliable Computing*, 15 (2011), No. 4, pp. 345–357.

[4] I. A. Sharaya. Quantifier-free descriptions for interval-quantifier linear systems. *Trudy Instituta Matematiki i Mekhaniki UrO RAN (Proceedings of the Institute of Mathematics and Mechanics, Ural Branch of the Russian Academy of Sciences)*, 20 (2014), No. 2, pp. 311–323.

[5] I. A. Sharaya. Boundary intervals method for visualization of polyhedral solution sets. *Computational Technologies*, 20 (2015), No. 1, pp. 75–103.