

ПО АДРОННОЙ ДОРОГЕ

*On the hadron road*

Celebrating 80 years of Gennady M. Zinovjev

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Gena was born on April 18, 1941, in Birobidjan, on the Amur River, the border between the Soviet Union and Manchuria (China). It is about as far from Moscow as you could get in the former Soviet Union, and it is as close to Seattle as it is to St. Petersburg.

I once flew over Birobidjan, so the pilot announced, on a flight to Japan and many, many hours beyond the Urals. Not much later we landed in Tokyo.



I have known Gena for almost 50 years.

We first met on the occasion of an “International Physics Conference” at Reinhardsbrunn in East Germany (the former German Democratic Republic) in April 1972.

As a West German, I was there only upon the insistence of our Russian colleagues- there were little or no contacts between GDR and West German physicists.

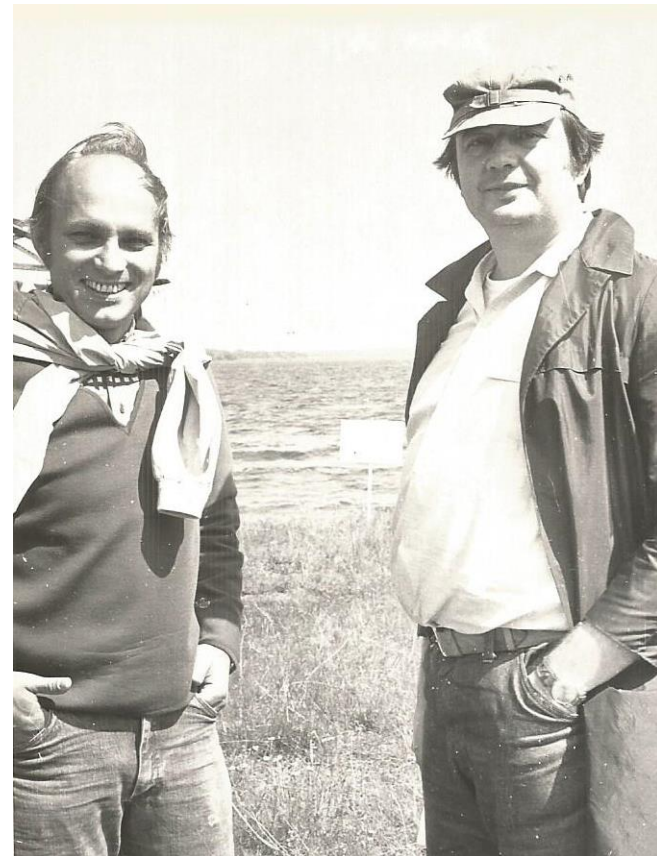
Gena and I had various opportunities to discuss and note numerous common interests, in particular in connection with the statistical bootstrap model of Rolf Hagedorn. Gena suggested that I visit him and his research team in the Soviet Union, and in the following year, in June 1973, I travelled to Dubna, on my first visit there.

Dubna was the most suitable place to meet – it is an “atomic” research center on the River Wolga, about 100 km north of Moscow, and at that time, it was not shown on any maps.

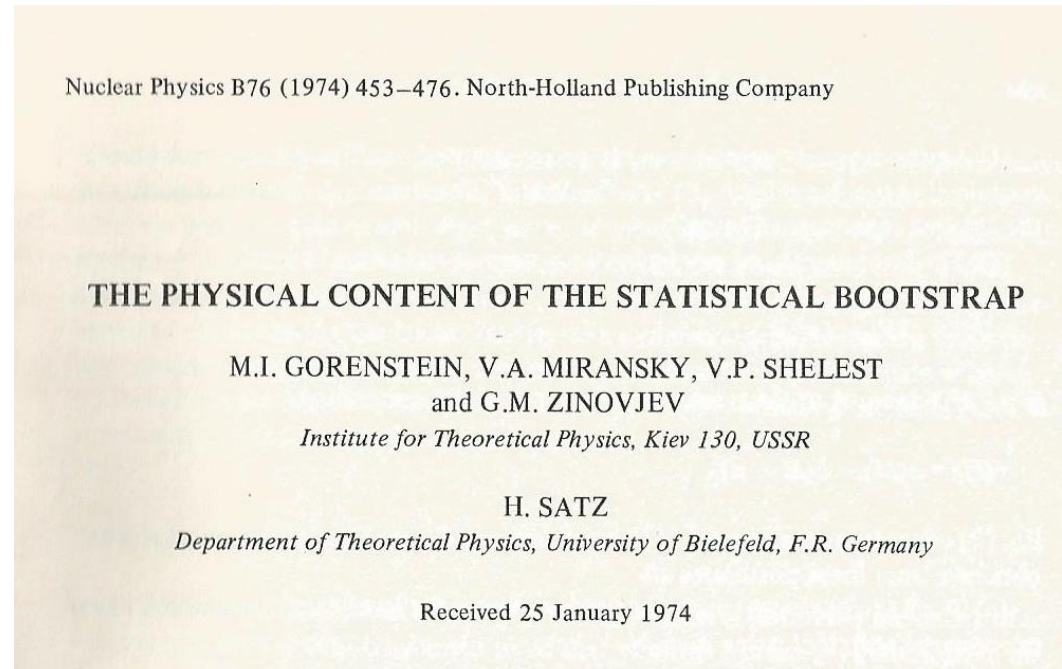
You were met at the Moscow airport by a driver and a Dubna official and then taken to the Guest House of the Laboratory, located on the Wolga.

In Dubna, I was met by Gena and his “hadronic” colleagues: Vitalij Shelest, Vladimir Miransky and Marek Gorenstein; they all came from Kiev, but our meeting in Dubna was easier to arrange.

We started immediately with our discussions of multihadron production: the aim was to bring together the earlier considerations of Pomeranchuk with Hagedorn’s work and with the dual resonance model.



Our discussions were not only loud and strong, but also quite fruitful. The results of the work started in June 1973 were submitted to publication already six months later.



Our conclusions were surprisingly in accord with today's considerations:

*Hence, if we wish to maintain any part of the statistical bootstrap model, we must consider separately the non-equilibrium phase of fireball formation, which, if at all endowed with temperature, certainly has an asymptotically unbounded one, followed by a fireball decay phase with ultimate temperature  $T_0$ .*

*The only way to create fireballs in a fully thermodynamic framework is by cooling the very hot non-equilibrium system produced in the collision down to the universal temperature  $T_0$  of the equilibrium fireball stage.*

And we agreed to continue our collaboration, which at that time meant that I would continue coming to Dubna.

My next visit was in January 1975, in deep Russian winter. I brought my Finnish cross country skis, and after some reflections by the officials was allowed to bring them into the country.



Dubna, January 1975

I decided to use this occasion to take a photo of the high energy theory building, realizing that that was presumably forbidden.

So to avoid spying charges, I stood in the middle of the road, in front of the building, and took the photo. Immediately several security people rushed out and took me with my camera into the guard house. A sequence of telephone calls was started, from one security level to the next higher one. Always with the result: “a foreigner with a camera? We can’t handle that”.

Eventually they reached the Dubna director for foreign affairs (I think his name was Romanov), and he had them take me into his office, where he was waiting for me with a bottle of Cognac, with my camera, and with the reassuring words: “No Incident”!

## The Dubna Theory Building

January 1975





My next trip to Dubna was already in June 1975, six months later. At that time, the Theory Institute organized international seminars on high energy physics – eventually these became known as Baldin Seminars, named after the Dubna director A. M. Baldin.

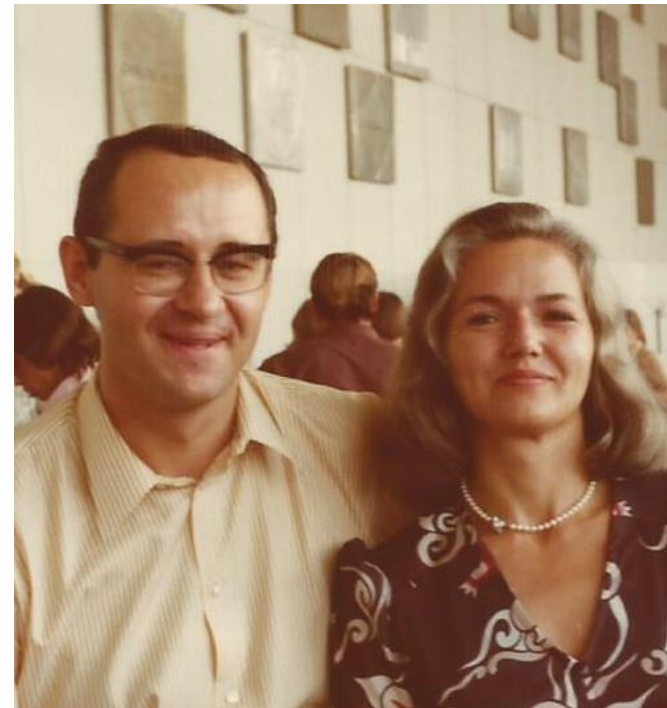
This gave outsiders like me the chance to meet Russian colleagues from other institutions and to discuss with them in a relaxed environment.

I recall with great pleasure  
many interesting discussions  
with Jevgenij L. Feinberg  
and with Edvard Shuryak



Vitalij Shelest had a car, and his wife Alla a driver's license. We used this to travel around quite a bit, which was presumably also illegal (one was required to stay in the assigned place, for me the Dubna Lab).

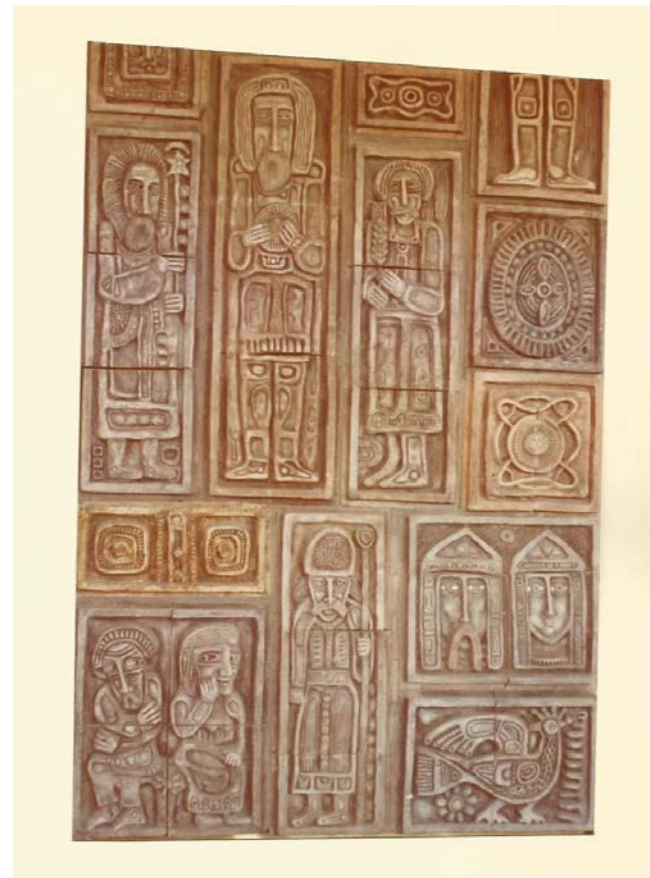
On one of these trips, Alla ran a red light, at a major crossing, with a policeman in a glass bubble overseeing the traffic. He immediately stopped us and made us get out....



Vitali and Alla Shelest

My next visit with Gena was somewhat less geographically restricted. In July 1976, we met at the 18<sup>th</sup> International Conference on High Energy Physics (the so-called Rochester Conference), which was held in Tbilisi/Georgia; both Gena and I were there.

On the return trip, I had a chance to visit Kiev and Gena's home institute. They were quite proud of a wall relief in the theory building, made by the famous/infamous artist Ivan Marchuk. You can see below why his art was not fully appreciated at the time of socialist realism.



BITP

Subsequently there were numerous other chances for Gena and me to meet. Gena was now married to Iryna Bogatskaya, and with Ira as a pawn in the Soviet Union, he was allowed to travel in the West as well.

Among other meetings, he attended our pioneering conference on Quark Matter Formation and Heavy Ion Collisions which Maurice Jacob and I had organized 1982 in Bielefeld. By today's count it was the second in series of Quark Matter meetings, and at this conference, the ground work and planning for high energy heavy ion experiments was established. So Gena was involved in this approach from the very beginning, and over the years he became more and more active in this direction.

With the beginning of the 1990's came the end and the dissolution of the Soviet Union. Gena now became the spokesman for high energy physics in the Ukraine. Sometime in the 1990's, I forget the year, Gena and I composed an application letter to CERN, to get the Ukraine associated; it succeeded.

My trips to the East had now become fewer and fewer – we could readily get together with our Russian colleagues here in the West.

I had become quite involved in the study of quarkonium in high energy nuclear collisions, as a tool for establishing deconfinement. In 1996 this gave me the chance for another paper with three Russian co-authors:

## PHYSICS LETTERS B

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On the sum rule approach to quarkonium-hadron interactions

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Gena had now become the boss of high energy physics in the Ukraine and continues to be closely associated with Dubna. In these capacity, he is very active in supporting collaborations between CERN, GSI and other institutions...but that is not something I can report on.

I can only close with

Happy Birthday, Gena,  
and welcome to the club  
of the Octogenarians

