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To the memory of Vladimir (Dima) Arnold

Dear Colleagues, by the technical reasons I cannot participate personally in the Meeting,
Let me mention only 2 pieces describing the most fruitful part (as I think) of my interaction with Arnold :

I.Dynamical Systems and Foliations in the Moscow Math School at the First Half of 1960ies:

I published an article in Uspekhi dedicated to the memory of Arnold, under this title—see my Homepage www.mi.ras.ru/˜snovikov, click the section "Russian Mathematicians in the XXth Century. Memoirs. Essays….". Russian and English versions of this article can be taken from this site.

I believe, it would be interest-
ing for younger generations of
mathematicians to know truth look-
ing at the strong and weak sites
of older generations who worked
at the "highest level" period in
the history of the Russian math-
ematical school.

One can see from this article how
I started to work on Foliations
pushed by Arnold.
He started to learn Differential
Topology and the Transversality
ideas from me in early 1960ies.
Several corollaries of that activ-
ity can be found in this article. It
is the first piece which I intended
to mention.

II. The second piece is dedicated to the role of Arnold
in the development and popular-ization of the Symplectic Ideas, especially of their geometrical and topological aspects.

I started to use them in the late 1960ies for the needs of Topol-ogy, tried to develop the Hermi-tian version of the Algebraic K-Theory based on the Symplec-tic Ideas, in order to define and calculate in some cases the so-called "Higher Signatures".
The popular "Novikov Conjec-ture" in the Theory of Rational Pontryagin Characteristic Classes appeared here.

However, Symplectic Language was not accepted by the topological community at that time, it became more narrow in 1970ies, isolated itself from other areas of mathematics

Gelfand was the first outside of topology who paid attention to my work in 1970ies.

He pointed out to me that similar Symplectic Ideas in fact explain the classical J.von Neuman's theory of the self-adjoint extensions of symmetric operators.

It was ignored in 1930ies, No idea to construct Geometry on the Symplectic base existed till 1960ies as far as I know.

I managed to use this observation only in 1990ies. The first work was published in 1997. Symplecto-Topological Phenomena appear in the Spectral and Scattering Theory for the real self-adjoint operators on graphs. The central work of this cycle was published in the volume 24 of the Fields Institute (1999) dedicated to the 60ieth birthday of Arnold, memorizing his contribution to the creation of Symplectic Geometry described in the Introduction.

This work can be found in my homepage
www.mi.ras.ru/˜snovikov,
click Publications, the item number 143

I think that the role of Arnold in the early development of Symplectic ideas should be counted as one of the very best among his achievements which survived "the test of time" as Russians are saying. Many times I used Symplectic Ideas solving concrete problems of Mathematics, Mathematical and Theoretical Physics. My knowledge of that started in the Arnold's Seminar in 1960ies.

I wish you successful Conference.