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## Science4Peace at DESY

Dear friends

CERN went 70 years old in September and DESY has its 65 birthday today, on 18. Dec ! And today is also my birthday, so please allow me to say a few, also personal, words.

I have been working at DESY and at CERN, the older sister in Geneva. I am emeritus, which certainly brings advantages, e.g. without worrying about consequences, being able to say what many others think, but do not dare.

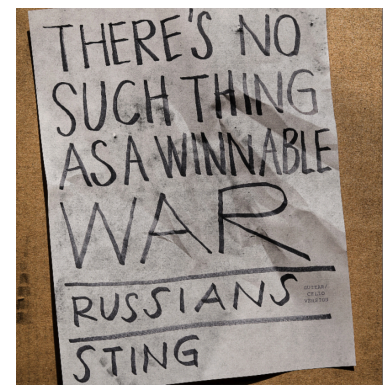
I'm still active in research, my heart beats for particle physics.

The largest collider at DESY was the HERA ring, colliding electrons and protons at energies not available before and still are the highest energies for this kind of collider. One of the main topics at HERA was strong interactions. **(Image)**



It's about the big questions: how is our universe built, how protons and neutrons are built, the components of atoms and molecules: it is about quarks and gluons which are the gluing particles for the quarks. And why do we exist build out mainly of quarks, while the gluons do not need quarks, they talk to themselves. To explore all this, we need very high energies and for this we need particle accelerators.

I would like to briefly report a bit about my own story: During my diploma thesis in Freiburg in the period from 1983-1984, we regularly had stays at CERN in Geneva. There I met colleagues from Poland, from the Soviet Union, from the GDR. It was incredible, I could talk to people, drink coffee or a glass of wine, talk with people I would never have had contact with otherwise. And I could ask and discuss. That was the time of the *Krefelder Appell*, we were opposing the stationing of long-range missiles, the Pershing II. It was the time when Sting sang in his song "Russians" in 1985 **(picture)**: "There's no such thing as a winnable war, It's a lie we don't believe anymore, We share the same biology, regardless of ideology, Believe me when I say to you, I hope the Russians love their children too". He re-recorded this song again in 2022, it could not be more relevant.



When I then started my PhD thesis at DESY in Hamburg - I was employed at the University of Karlsruhe - a standard inquiry at the Verfassungsschutz (German intelligence service) came and I had to explain what was meant by the following sentence from a flyer for the election of student council: "To save themselves, they risk our lives. It's not the first time they're making us believe we're threatened - from the East." Almost at the same time as the request from the Verfassungsschutz, was the SDI project of US President R. Reagan to station weapons in space to protect against possible attacks, but also to carry out attacks (of course only for defense !). Interestingly, laser weapons and even free electron lasers were discussed at that

time. At DESY, and not only there, there was a broad movement against it, many physicists have explicitly spoken out against participating in these plans for space armament<sup>1</sup> **(picture)**. H. Spitzer, my doctor-father in Hamburg, will tell much more about the Peace initiative at Hamburg (and German) universities a bit later. Today there are laser weapons and free electron lasers XFEL, FLASH are in use at DESY for PhotonScience. In a 2020 report<sup>2</sup> "Use of Free Electron lasers and beyond" it is said "FELs in general will play no role for the foreseeable future in the development of directed-energy weapons (DEWs)." That was 2020. In a YouTube video<sup>3</sup>, XFEL laser weapons and the interest of the US Navy are already mentioned in 2010, and the British army reported a great success with laser weapons a few months ago<sup>4</sup> (although not yet with Free Electron Lasers) **(picture)**.

But back to particle physics:

CERN, the international center for particle physics in Geneva, was built from the experience of the Second World War, by scientists who were still at war against each other years before. It was founded in 1954 and with it the Science4Peace<sup>5</sup> idea was born **(picture)**. John Ellis will talk about this more later.

Basic research is universal, the question of the origin of the universe is independent of national and political interests. This provided an opportunity to build trust and mutual respect in scientific cooperation and thus also an opportunity for exchange. In the constitution of CERN it says in article 2<sup>6</sup>: "The Organization shall have no concern with work for military requirements ...." **(Image)**

DESY was founded 5 years later on 18. Dec 1959, as a national research center. The constitution does not contain any focus on peaceful and civilian research, but this was not necessary, since Germany had no army until 1955, they joined NATO only in the same year. The German Atomprogram started in 1955 to develop the **civil and peaceful use** of nuclear energy (anything else was not allowed by the allied states). I hope this was the reason, why nothing about military research was mentioned in DESY's constitution. It was the time, where two German states were existing, belonging to different military and political blocs.

<sup>1</sup> <https://science4peacedesy.de/sdidesy.html>

<sup>2</sup> <https://bib-pubdb1.desy.de/record/470923>

<sup>3</sup> <https://www.youtube.com/watch?v=fWdGkb7r1iA>

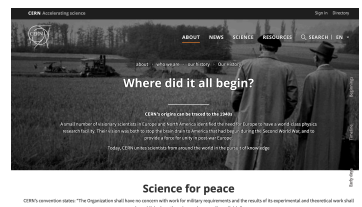
<sup>4</sup> <https://www.gov.uk/government/news/first-trial-on-british-army-vehicle-for-high-powered-laser-weapon>

<sup>5</sup> <https://home.cern/about/who-we-are/our-history>

<sup>6</sup> <https://cds.cern.ch/record/330625?ln=de>



During a trial at the MOD's Hebrides Range, the DragonFire laser directed energy weapon (DEW) system achieved the UK's first high-power firing of a laser weapon against aerial targets. The range of DragonFire is classified, but it is a line-of-sight weapon and can engage with any visible target. PHOTOGRAPH: UK GOV



In a report from DESY about the history of the institute in Zeuthen<sup>7</sup> (close to Berlin) it is reported, that the then institute IFH (Institute für Hochenergiephysik in Zeuthen) in the GDR had already cooperation with DESY in the years 1963 - 1967, this was the hot time of the cold war ! This institute in Zeuthen had cooperations with Berkeley in the US in the years 1955 - 1960.

Later, the institute in Zeuthen in GDR joined the H1 experiment in 1985, still during the cold war, and scientists from the former GDR were visiting Hamburg. I still remember a report of a colleague from Zeuthen in a meeting of the Hamburg Scientist4Peace group about the worrying situation in GDR, years before the fall of the Berlin Wall. This was an unbelievable experience, to hear directly about the political situation there and to be able to discuss. This was only possible since we had a collaboration with institutes and people from the Eastern Bloc at DESY already then.

Cooperation with the institutes from the Soviet Union in experiments at DESY go even back to 1978<sup>8</sup>, where a new detector for the  $e^+e^-$  storage ring DORIS was proposed, the ARGUS detector. A colleague, Prof J. Bienlein reported, that he had started first cooperation with scientists from Poland in 1972.

In a public presentation at DESY in 1996 the cooperation with Russian institutes was celebrated, cooperation with the Lebedev Institute goes back to 1983, this institute became official member of the H1 collaboration at DESY in 1986. In 1988 2500 tons of huge iron modules, produced at Izhora plants near Leningrad (St Petersburg) were transported from Leningrad to Hamburg for the Iron structure of the H1 experiment<sup>9</sup>.

This was also the time, where new missiles were planned to be stationed in Germany and where the big peace movements in Germany started.

To remember, already since 1978, DESY had repeatedly and increasingly cooperated with the then Soviet Union and many other countries of the East. And some cooperations started even earlier.

Another wonderful example of successful scientific cooperation in the



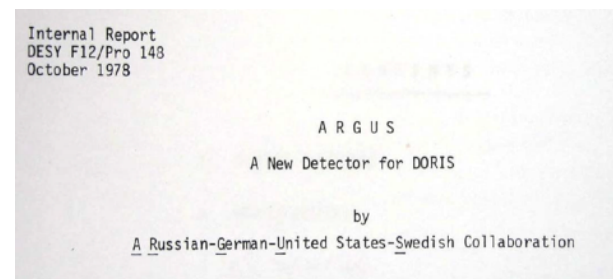
**Zeitreise: Vom Institut X zum DESY – eine deutsche Geschichte**

**Aktivitäten und Kooperationen**

Das IFH und später das DESY in Zeuthen beteiligten sich an folgenden Experimenten und Anlagen:

**vor 1991**

1955–1960	Kernemulsion, Berkeley, USA
1962–1965	24-cm-Propan-Blasenammer, VIK Dubna
1963–1967	81-cm-Wasserstoff-Blasenammer, CERN
1963–1967	84-cm-Wasserstoff-Blasenammer, DESY
1966–1980	2-m-Wasserstoff-Blasenammer, CERN
1974–1982	Mirabelle, Wasserstoff-Blasenammer, IFH Serpuchow
1974–1982	RISK-Streamer-Kammer, IFH Serpuchow
1976–1985	NA-4, Myon-Spektrometer, CERN
1980–1984	BEBI, 3,7-m-Blasenammer, CERN
1980–1988	SKAT, Freon-Blasenammer, IFH Serpuchow
1980–1990	Neutrino-Kalorimeter, IFH Serpuchow
1983–2002	L3 am LEP-Beschleuniger, CERN
1988–2010	H1 am HERA-Beschleuniger, DESY
1988–1991	Europäisches Hybrid-Spektrometer EHS, CERN
1988–2008	NT-200, Neutrinoteleskop, Baikalsee



<sup>7</sup> [https://pr.desy.de/sites/sites\\_desygroups/sites\\_extern/site\\_pr/content/e113/e143399/e143423/Broschuere\\_DESY\\_Zeuthen\\_Zeitreise\\_Web\\_ger.pdf](https://pr.desy.de/sites/sites_desygroups/sites_extern/site_pr/content/e113/e143399/e143423/Broschuere_DESY_Zeuthen_Zeitreise_Web_ger.pdf)

<sup>8</sup> <https://inspirehep.net/literature/132435>

<sup>9</sup> VDI Nachrichten (courtesy of Gerd Wöbke)



A photograph showing four men sitting on a large pile of yellowed, cylindrical objects, likely spent shell casings, in an industrial setting. The men are dressed in work clothes, including caps and jackets. The background shows industrial buildings and a paved area.

A beautiful example of international collaboration and mutual trust through scientific collaboration.

All this has fundamentally changed with the beginning of the Ukraine war. In Germany all cooperations with Russia were terminated. DESY took a particularly strong position<sup>11</sup>: Russian scientists had to leave the institutes, even scientists who had lived and worked in Germany for more than 20 years were no longer allowed to use their email and computer access at DESY. These sanctions exist still today. But not only this, common publication with scientists from Russia were no longer allowed, a work where I was participating, could not be published with my name on. DESY did not allow to mention the Russian affiliations, a very discriminatory action. Even more, DESY did not allow participation in conferences, where scientists from Russia present talks.

[illegible]

In contrast to DESY, the University of Hamburg put future cooperations on hold, but explicitly did not ban any publication with Russian scientists<sup>14</sup>.

<sup>14</sup> <https://www.uni-hamburg.de/uhhhilft-ukraine/faq.html>,  
<https://science4peace.com/ewExternalFiles/HH-Uni-20220331-P-Brief-Umgang-Kooperationen-mit-Russland-ab-April.pdf>

But not only DESY, also CERN launched sanctions against Russian scientists.

## That's unbelievable!

There was and is great protest by scientists against these measures, the Science4Peace Forum has organized events, collected signatures, and published two articles against the exclusion of scientists<sup>15</sup>.

For the first time in the history of DESY, the directorate of DESY forced all employees to follow a very questionable policy, full of double standards.

It was very interesting, that just one day after the war against Ukraine started on 24. February 2022, the Alliance of German Science Organizations launched a statement announcing sanctions against Russia<sup>16</sup>. How can it be, that they were able to launch such heavy sanctions so quickly.... it seems that this was already prepared long before.... so all mentioned surprises are just non-sense !

The consequences of this “Zeitenwende” are not yet foreseeable. The Russian scientists are very frustrated by the behavior of their “Western” colleagues who argue so morally.

How can it be that such a double standard is applied and accepted, a double standard that of course is not limited to science.

Israel is waging a terrible war against the people of Gaza and also the West Bank. Institutes from Israel are also participating in experiments at DESY.

To be clear - no one questions the cooperation in science with Israel, and that is good so: we have to keep talking to each other, even if it is sometimes difficult. The exclusion of scientists is not a solution, it only promotes isolation, which can be very dangerous because the other side becomes invisible.

But these double standards and exclusion at DESY and CERN will most likely have very big consequences: which country will want to participate financially in future projects if there is a risk of being excluded? It is just not understandable for me and many colleagues why such successful projects of cooperation at DESY and CERN were sacrificed for the short-term goals of very questionable politics.

Yes, we were probably far too naive: we, many, many scientists, never thought that politics could rule scientific institutions with long traditions in international collaborations and where bridges and trust has been build for several decades, and where the Science4Peace idea could be filled with content, especially when it is needed. Our institutions should have publicly said: “Sanctions in science - not with us !”.

Beyond a Year of Sanctions in Science  
M. Albrecht , A. Alt , M. Barrow , S. Bräse , M. Bura , J. Ellis ,  
A. Glazov , H. Jung , M. Mangano , G. Neureck , N. Rätze , J. Scheffran ,  
M. Spizzo , F. van Mechelen , J. Vigen 

November 7, 2023

### Abstract

While sanctions in political and economic areas are now part of the standard repertoire of Western countries (not always ordered by UN mandates), sanctions in science and culture in general are new. Historically, fundamental research as conducted at international research centers such as CERN has long been seen as a driver for peace, and the Science4Peace idea has been celebrated for decades. However, much changed with the war against Ukraine, and most Western science organizations put scientific cooperation with Russia and Belarus on hold immediately after the start of the war in 2022. In addition, common publications and participation in conferences were banned by some institutions, going against the ideal of free scientific exchange and communication. These and other points were the topics of an international virtual panel discussion organized by the Science4Peace Forum together with the Max Planck Society - Responsibility for Peace and Sustainability (NaWiPa e.V.) in Germany and the journal *Wissenschaft und Frieden* (WiPaF) [5] (see the Figure). Fellows from the Hamburg Institute for Peace Research and Security (HIPS) [6] scientists collaborating with the large physics research institutes DESY and CERN, as well as from climate and future research were represented on the panel.

In this Dossier we document the panel discussion, and give additional perspectives.

### Allianz der Wissenschaftsorganisationen

Alexander von Humboldt-Stiftung  
Deutsche Forschungsgemeinschaft  
Freiwilliger-Gesellschaft  
Hochschulrektorenkonferenz  
Leibniz-Gemeinschaft

Nationale Akademie der Wissenschaften Leopoldina  
Deutscher Akademischer Austauschdienst  
Helmholtz-Gemeinschaft  
Max-Planck-Gesellschaft  
Wissenschaftsrat

### Stellungnahme

25. Februar 2022

### Allianz der Wissenschaftsorganisationen: Solidarität mit Partnern in der Ukraine - Konsequenzen für die Wissenschaft

Die Allianz der deutschen Wissenschaftsorganisationen unterstützt nachdrücklich das konsequente Vorgehen der Bundesregierung gegen den kriegserregenden und völkerrechtswidrigen Angriff Russlands auf die Ukraine.

<sup>15</sup> <https://arxiv.org/abs/2311.02141>, <https://arxiv.org/abs/2403.07833>

<sup>16</sup> [https://www.helmholtz.de/assets/helmholtz\\_gemeinschaft/Downloads/Allianz\\_der\\_Wissenschaftsorganisationen\\_-\\_Stellungnahme\\_zum\\_Angriff\\_auf\\_die\\_Ukraine\\_-\\_25.02.2022.pdf](https://www.helmholtz.de/assets/helmholtz_gemeinschaft/Downloads/Allianz_der_Wissenschaftsorganisationen_-_Stellungnahme_zum_Angriff_auf_die_Ukraine_-_25.02.2022.pdf)

In a very good article in the CERN courier<sup>17</sup> with the title "Science For Peace? More than ever!" the former director of CERN, Herwig Schopper, already emphasized in 2022 that the bridges should not be cut, because there will be an after, and we have to talk to each other.

In the many years, even during the cold war, and later, Science4Peace was a beautiful phrase that was used again and again in public talks. It is a shame that, now especially at a time when Science4Peace should have played a role, nothing or too little was done by most science politicians.

Even today, there are still restrictions on the participation of Russian scientists in scientific conferences and joint scientific publications. But most have gotten used to it.

An old enemy image has come up again, which was long forgotten. Bob Dylan sang in his song in 1964<sup>18</sup> "With God on our Side" "... I learned to hate the Russians, all through my whole life, If another war comes, it's them we must fight ...".

We must no longer fall into these old enemy images, we must try to build a world under the motto "Create peace with fewer weapons"!

But, the most important push-back of the Science4Peace idea was given by the DESY directorate when they announced to start a discussion to allow military research at DESY in summer 2024.

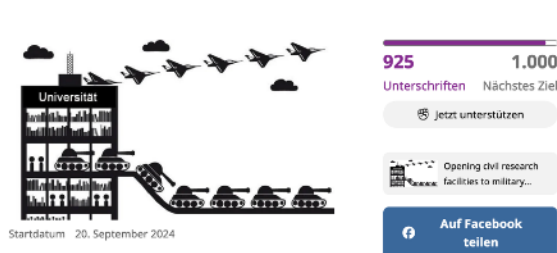
A signature campaign was launched by employees at DESY to oppose the opening to military research, and above all to say clearly: NotInOurName (**picture**). This campaign is already supported by many DESY employees, and meanwhile also has quite a lot of supporters on change.org<sup>19</sup> - the signature list is open now to everybody.

This campaign picks up on petition campaigns in earlier years, in 1985 against the star wars program of R. Reagan, but also on petitions against wars in former Yugoslavia and later in Iraq. Employees at DESY have been very engaged in Science4Peace, they have filled the idea with content.

The debate about the civil clause in Germany,



## Opening civil research facilities to military projects is NOT IN OUR NAME !



<sup>17</sup> <https://cerncourier.com/a/science-for-peace-more-than-ever/>

<sup>18</sup> [https://en.wikipedia.org/wiki/With\\_God\\_on\\_Our\\_Side\\_\(song\)](https://en.wikipedia.org/wiki/With_God_on_Our_Side_(song))

<sup>19</sup> <https://www.change.org/MilitaryResearchIsNotInOurName>

and especially in research institutes such as DESY, is very dangerous.

Of course, scientific knowledge can be applied in different directions, this is nothing new. With a sword one can plough the soil, with a plough one can also kill, but the sense of a plough is different from that of a sword. With the debate about dual-use, and that one often cannot foresee the application, one tries to complicate and dilute the discussion. One tries to blur the fact that there are very often unambiguous assignments. A Free-Elektron Laser, which is used as a weapon and is used by the military, is something different from a Free-Elektron Laser that is built and operated in an institute that performs research for civil and peaceful purposes.

The debate at DESY has given quite some insights: a leader of a beam-line at PETRA III at DESY said in the public event on "*Zeitenwende*" in Science on 12. Nov 2024, that they had rejected a project which was aiming to study explosive materials as well as another project to study materials under heavy neutron exposure, which is used in building nuclear weapons .... and *not so much to make cars more safe* !

These projects could be rejected, because of the "Leitbild" at DESY, which focuses research on "civil and peaceful goals".<sup>20</sup>

### **This is a wonderful example why a civil clause is important and essential!**

With the sanctions against Russian and Belarusian scientists at CERN, and German universities and research institutions, a very big step was taken to bring science under the guidance of politics. There are not only sanctions against Russian scientists and cooperations. It goes much further, the focus of politics is becoming clearer now: A few weeks ago, the Deutsche Forschungs Gemeinschaft (DFG) and Leopoldina presented a report on "Freedom of Science and Security Interests in Times of Geopolitical Polarization"<sup>21</sup>, which states: "Science and innovation are therefore also increasingly being identified as a geopolitical means of power ... in the sense of national security interests." There is a demand<sup>22</sup> to expand the "intensification of research cooperation with partner states which share the same values. Relations with states that pursue completely different values and goals than Germany and Europe must continue to be subjected to consistent de-risking."

In other words, science should be sworn to the course of confrontation and the dominance of the West, where moral arguments, such as those in relation to Israel and Gaza, do not play a role.

If we do not oppose this, then we make ourselves companions of a fatal policy.

If we understand science as something universal, if we value international cooperations and collaborations, and if we take the Science4Peace idea seriously, then we must stand up for truly international collaborations, we must try to build and expand them.

At the Science4Peace Forum, a "Science4Peace Foundation" is currently being discussed, which can promote such projects, because we no longer want and cannot leave it to

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<sup>20</sup> [https://www.desy.de/about\\_desy/mission\\_and\\_guiding\\_principles/index\\_eng.html](https://www.desy.de/about_desy/mission_and_guiding_principles/index_eng.html)

<sup>21</sup> <https://www.sicherheitsrelevante-forschung.org/publikation-taetigkeitsbericht2024/>

<sup>22</sup> <http://www.fdpbt.de/sites/default/files/2024-03/positionspapier-wissenschaft-in-der-zeitenwende.pdf>

governments. We have just launched a donation campaign<sup>23</sup> to support physics students in Westbank to continue their study at the University. And we are discussing organizing online courses for students in Gaza and the West Bank, and other countries suffering from war and violence.

We must build positive alternatives, for real international cooperation, and against national demarcation.

#### Science4Peace Fund Contributing to university fees for Nablus physics students

The Science4Peace Fund is committed to use the language of peaceful scientific research to build bridges across borders and to communicate with scientists all over the world. University education is essential for scientists, so it is of the utmost importance that everybody interested in science has a chance to study at university.

We are convinced teaching where universities are attacked and disrupted during wars. No soldier expects where science is taught. They are the opposite of war. They should be places where young people are inspired to invent thoughts and ideas, where the language of science forms a bridge, and where scientific methods are applied to resolve problems. After all, learning activities – particularly fundamental fields like physics and mathematics – opens up new horizons and makes strong, critical thinking, which is vital for society as a whole.

The war in Gaza and the universities in the West Bank are suffering. All the universities in Gaza have been destroyed. Students and teachers in the West Bank face extreme difficulties to keep the university system running with resources continuing. We are engaged and encouraged that, even under these very difficult conditions, students want to learn science and spend time to study it.

The Science4Peace Fund aims to support education and teaching under such difficult conditions. Through support and education aid is needed in many other places in addition to Gaza and the West Bank. However, as a start, the Science4Peace Fund is launching a donation campaign to contribute to university fees for half a semester for students of physics at the Nablus University in Nablus, so that they can continue their current studies.

This campaign is being coordinated with the Physics Faculty at An-Najah University, contact person Ahmed Bazzal, a member of the IAC-ASG Collaboration at the CERN LHC.

The donation campaign started on Dec 10, 2020:  
<https://www.paypal.com/np0/b30630u/134123515475493809>



Link to the text

The attack on the sciences as it is currently being made is, I believe, unique in recent history. It is important, that at DESY, at CERN and at any other place the Science4Peace idea is kept alive, is filled with content, and applied especially in difficult times.

I find it impressive, that there have been and still are many very positive examples, where cooperation and collaboration are kept alive. And it is very encouraging, while not encouraged by the directorates, these cooperation is done by the employees keeping working together with their colleagues !

Thank you.

Many thanks go to J. Bienlein , J. Gayler, H. Spitzer, J. Olsson

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<sup>23</sup> <https://science4peace.com/Fund/Entries/2024/12/s4p-fund-contributing-to-university-fees-for-nablus-physics-students.html>