




1 Sanctions in Science - One year of sanctions

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Abstract

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While sanctions in political and economic areas are now part of the standard repertoire (not only) of the EU and the USA, sanctions in science and culture in general are new. Fundamental research as performed at the research centers CERN was seen since long as a driver for peace, and the Science4Peace idea was celebrated. A lot has changed with the war against Ukraine, most of the western and EU science organizations have put all scientific cooperation with Russia and Belorussia on hold immediately after the start of the war in 2022. Common publications and participation in conferences were in addition banned by some institutions, changing significantly the attitude of free exchange and communication.

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These, and other points were the topic of an international virtual panel discussion organized by the Science4Peace Forum together with the *Natural Scientists Initiative - Responsibility for Peace and Sustainability* (NatWiss e.V.) [1] in Germany and the journal *Wissenschaft und Frieden* (W&F) [2]. Fellows from the Hamburg Institute for Peace Research and Security Policy (IFSH) [3], scientists from large physics research institutes (DESY and CERN), as well as from climate and future research were represented on the podium.

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In this Dossier we document the panel discussion, and give some further input.

Science4Peace Forum,
NatWiss - Verantwortung für Frieden und Zukunftsfähigkeit e.V.,
W&F - Wissenschaft & Frieden
invite

Sanctions in Science
One year of sanctions
A virtual panel discussion

12 April 2023, 5 pm (CEST)

Panel:

- Dr Michael Brzoska (IFSH Hamburg)
- Dr Alexander Glazov (Particle Physics, BELLE II, DESY)
- Charles K. Johnson (Program Director of IPPNW international)
- Dr Götz Neuneck (Vereinigung deutscher Wissenschaftler VDW, Co-chair and Pugwash)
- Dr Clara Portela (Faculty of Law, University of Valencia)
- Dr Natasa Raicevic (Particle Physics, CMS, University of Montenegro)
- Dr Michel Spiro (President of the International Union of Pure and Applied Physics, IUPAP, and chair of the board of the CERN&Society foundation)
- Dr Jürgen Scheffran (Geography, University of Hamburg, NatWiss, VDW)
- Dr Ernst von Weizsäcker (Honorary President of Club of Rome)

Moderation: Dr John Ellis (King's College London, CERN)

<https://tinyurl.com/Science4Peace-PanelDiscussion>



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Science4Peace Forum contact: hannes.jung@cern.ch
NatWiss: <http://natwiss.de/>
Wissenschaft & Frieden: <https://www.wissenschaft-und-frieden.de>

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1 Introduction

With the invasion of troops of the army of the Russian Federation into the territory of the Ukraine end of February 2022, not only the western scientific world changed a lot. While many Russian and Belorussian scientists protested immediately against the war [4], most of the western Science Institutions released a ban on the historical scientific cooperation with Russian institutions, for example the German Science Organizations [5] recommended to freeze all scientific cooperations with Russian State institutions. Some German research laboratories, like DESY in Hamburg, went even a step further and banned in addition all common scientific publications and participation in scientific conferences [6,7].

Scientists at DESY, CERN and elsewhere were very shocked about the war and demanded to stop immediately this senseless murdering and killing of people. While unified in the protest against the war, many scientists were also shocked about the immediate reactions of the science organizations to put on ice long-standing collaborations and felt that such actions in the field of science is against the *Science for Peace* idea which led to the funding of CERN. After world war II scientists came together and founded with the help of UNESCO in 1954 CERN, Europe's largest research center for particle physics. One of CERN's missions is *Science for Peace* [8]. In a very interesting article from 1975 [9], the history of cooperation between CERN and JINR from 1955 - 1970 was reviewed. During a Science4Peace seminar in November 2021 [10], the former director general from CERN, R. Heuer, explained enthusiastically how science at CERN but also at different labs and institutes and different regions of the world contributes as a driver for peace.

Many of us, working at CERN in large experimental collaborations or as visitors, enjoyed this spirit of an open scientific community, which allowed even during the Cold War exchange of scientists and scientific collaboration over borders. We were proud of our international contacts and collaborations and we were proud to promote scientific collaboration across the world as a driver for peace.

As a reaction of the drastic changes in science policy of some science organizations and research laboratories, scientist from DESY and CERN launched on March 3, 2022 an open letter to the DESY directorate to protest against the very strong reactions [11] and founded the Science4Peace Forum [12]. After discussions in a wider round, and being afraid that also in other research laboratories like CERN such strong reactions could be implemented, a general petition *Stop the Escalation Spiral* [13] was launched. In this petition it is argued that *the sanctions imposed on scientists are counterproductive, they do not put pressure on the Russian government, but make communication among scientists difficult and in some cases impossible. They often affect colleagues who share our condemnation of the war and have endangered their own welfare by expressing their opinions publicly. These sanctions will not help to achieve a ceasefire or resolve the conflict. On the contrary, these measures will isolate Russian and Belarusian scientists and decouple them from international discussions, in science and elsewhere.* The scientists also request to *maintain scientific cooperation, so as to avoid the useless proliferation of sources of tension that escalate the conflict and extend it to the scientific and personal relations within the physics community.*

After the beginning of the war, all publications of the big particle physics experiments

64 at CERN were put on hold, and in November 2022 the experiments decided to remove the
65 official affiliations of Russian and Belorussian scientists, and replace it with *affiliated with an*
66 *institute covered by a cooperation agreement with CERN* [14]. Other big particle physics experi-
67 ments, like Belle II, went in a different direction and replaced all affiliations by just the OR-
68 CID number [15]. In September 2022, the former director of DESY and CERN and founder of
69 the SESAME project, H. Schopper, made very clear statements on *Science4Peace ? More than*
70 *ever !* [16].

71 While scientists are concerned about scientific cooperation and the spirit of international
72 collaboration as a driver for peace when communication is restricted and groups of scientists
73 are excluded from common projects (for further discussion see [17–19]), a even greater worry
74 including everybody is the fear of a further escalation and the risk of a nuclear inferno. The
75 Science4Peace Forum has launched together with 14 Nobel Laureates and other well-known
76 scientists a petition *No First Use - Never Any Use of Nuclear Weapons* [20].

77 After one year of war against Ukraine, and one year of sanctions in science, a panel dis-
78 cussion on *Sanctions in Science - One Year of Sanctions* [21] was organized by the Science4Peace
79 Forum to recap the consequences of sanctions and to discuss the future of scientific cooper-
80 ation. The following Dossier covers contributions at the panel discussion but also further
81 comments on the future of scientific cooperation.

82 **2 Sanctions in Science - One Year of Sanctions**

83 **2.1 N. Raicevic, CMS, University of Montenegro, Podgorica, Montenegro**

84 When coming to the question of sanctions in science, especially for the case of big interna-
85 tional scientific collaborations which bring results from the united effort of many scientists
86 from different countries all over the world, the two points would be important to review:
87 Examples how the sanctions in science were conducted in the past ? here we gave an exam-
88 ple of Yugoslavia in 90?s; Examples of how opposing parties in wars and conflicts recently
89 started and renewed cooperation through scientific collaborations ? example of SESAME
90 project. Thirty years ago, Federal Republic of Yugoslavia (Serbia and Montenegro) was un-
91 der embargo and sanctions from UN security Council because of interference in civil war in
92 Bosnia. The former Socialist Federal Republic of Yugoslavia had been one of the 12 founding
93 countries of CERN in 1950s. It left the Organization in 1961 and in the time when sanctions
94 took place had the status of Observer to CERN Council.

95 As soon as sanctions took place, CERN announced that they will not ignore the unani-
96 mous will of the international community and CERN had adopted the United Nation’s em-
97 bargo against Federal Republic of Yugoslavia promptly. The details how CERN reacted can
98 be found in the official site (cern-and-un-embargo-against-serbia-and-montenegro).

99 CERN took all the measures to run down the activities of cooperation with Serbia and
100 Montenegro. For example, all data communications using computer networks were shut
101 down. No scientific materials were sent from CERN to Yugoslavia or vice versa. Since the
102 embargo was announced, no CERN personnel had visited Yugoslavia. CERN also decided

103 not to enforce the Agreements of Scientific Cooperation it had signed in 1989 and in 1991
104 and had consequently discontinued all cooperation with scientific institutes of Serbia and
105 Montenegro.

106 Now, thirty years after, there were very careful, rather long discussions within CERN col-
107 laborations trying to find the most decent way to apply the sanctions towards our colleagues
108 from Russia and Belorussia which lasted for about a year and at the end (after secret voting)
109 they were kind of compromise between several sides who had too strong feelings towards
110 the sanctions.

111 In the situation of the war in Ukraine, CERN has not taken so sharp actions toward our
112 colleagues from Russia and Belorussia. CERN had amortized the actions as long as they
113 could and we could actually see that there was a lot of opinion exchange in the Council itself
114 and also between the collaborations. The appeals from scientists and especially Science for
115 Peace Forum, had played an important role for the sanctions to not be so severe as they were
116 in 90s in the case of Yugoslavia. Of course, the presence, contribution and impact of Russian
117 scientists at CERN was much more significant than the Yugoslav ones.

118 Any sanctions themselves put a country in a difficult situation and, after all, they give
119 the greatest consequences in science and culture. During the recovery, after the political and
120 economic sanctions, the country solves the most urgent problems first, and the collapsed
121 science and culture will wait for their recovery for a long time.

122 We should light all the good examples that were present in science and that are still there.

123 In this place, the multi-year project SESAME should be mentioned. The project started
124 officially working in 2017 and has been implemented in Jordan and represents a true center
125 of science nowadays. It actually was supported by CERN with the aim to use science as a
126 way to learn to work together in the Middle East. SESAME is the shortness of Synchrotron-
127 light for Experimental Science and Applications in the Middle East. It was established with
128 the support of the United Nations Educational, Scientific and Cultural Organization ? UN-
129 ESCO as a Science for Peace project. So, there are projects that are developed with one of
130 the main aims of building scientific and cultural bridges between participating countries,
131 and strengthening mutual understanding and tolerance through international cooperation
132 between people who were recently or currently in conflict.

133 We know this works and there is no reason why should one go and spoil scientific col-
134 laboration which are build and function on the solid grounds for many years thanks to the
135 dedication of scientists who take great care of it. Such collaborations should not be sensitive
136 to the too many injustices, violations of rights, and wars we have been seeing.

137 **2.2 Michel Spiro, President IUPAP and Jens Vigen, Secretary General IUPAP**

138 IUPAP, since its outset hundred years ago, has defended the position that no scientists should
139 be bared from participating in conferences or events on the basis of their nationality or their
140 affiliation. This position is clearly reflected in Article 3 [22] in the Articles of Association
141 (latest adopted by the General Assembly on 22 October 2021). The text says (without the
142 underlines/bold, those I have permitted to add for the purpose of this email): *The purpose of*

143 *IUPAP is to assist in the worldwide development of physics, to foster international cooperation in*
144 *physics*

145 *IUPAP carries out its Purpose by **sponsoring international meetings**; ; upholding open-*
146 *ness, honesty and integrity in the practice, application and promotion of physics; **supporting the***
147 ***free circulation of scientists**; ...*

148 To overcome sanctions against our Russian and Belorussian colleagues, IUPAP at its last
149 General Assembly (July 2022) approved the possibility for anyone not actively supporting
150 war and are committed to democratic principles for resolving disagreements and conflicts to
151 use IUPAP as their affiliation when participating at conferences [23].

152 So IUPAP sticks to its principled position, which is that no scientists should be bared from
153 participating in any IUPAP-Supported Conference or event on the basis of their nationality
154 or affiliation, and that any event where this position is rejected, including rejection of mech-
155 anisms that we have formulated to diffuse simmering tensions arising from geo-political
156 conflicts, should not enjoy IUPAP support.

157 I hope that all colleagues will adhere to the IUPAP position and in that way contribute
158 to foster international cooperation. We will be ready to assist anyone if he opts for using the
159 IUPAP-affiliation for colleagues affiliated to Russian or Belorussian institutes.

160 We are ready to extend this mechanism to schools and even to collaborations with adapted
161 schemes.

162 **2.3 Götz Neuneck Co-chair, Federation of German Scientists and German** 163 **Pugwash Representative and Council Member**

164 From my perspective, modern sciences are rooted in humanism and progress for all mankind.
165 Its main principles are objectivity, rational reasoning, international exchange which must be
166 preserved also in confrontational times. These principles are always endangered. There are
167 many good historical examples for successful cooperation such as the International Geo-
168 physical Year in 1957, the foundation of CERN and DESY, the International Space Station
169 or the Sesame Project in the Near East. The Scientific community should serve as a bridge
170 across boundaries, as ?a spearhead of international understanding?, as pointed out by Victor
171 Weisskopf?. On the other side, scientists should not be naive. Science is not only for inter-
172 national cooperation, but is a competitive enterprise on glory, prestige and national funds.
173 In extreme cases scientific results can be misused for military purposes, disclosing the am-
174 bivalence of science. The ambivalent nature of scientific knowledge will always exist and
175 can only be mitigated by dialogue, preventive measures, technological assessment and arms
176 control talks. As several political documents show, the scientific community is more and
177 more challenged by a new geopolitical rivalry between the US, Russia and China. One ex-
178 ample is the emerging new arms race between these superpowers. The brutal and unlawful
179 war in the Ukraine has not only triggered far reaching economic sanctions by the European
180 Union against Russia and Belarus for its , but also led to a freeze of official cooperations with
181 scientific state institutions in Russia and Belarus which support openly this war of aggres-
182 sion. Russian scientists must exercise the duty not making heated and servile statements to

183 defend an unlawful war against a sovereign country, but instead contribute to a solution. Of
184 course, sanctions in science are in general counterproductive in the long run, either for the
185 scientists themselves or for the scientific progress as such. Also, state entities and should
186 be very careful here to assess the individual and scientific implications of these sanctions
187 permanently. Although emphasizing that these sanctions are not applied against single indi-
188 viduals, the collateral damage of official sanctions must be carefully estimated and reversed
189 quickly if the right conditions are met. Western scientists must also talk with their Russian
190 counterparts about the origin, implications and possible solutions for this bloody war in the
191 Ukraine. And there is hope that the relations with Russia can be re-erected if the war is over.
192 The Pugwash Conferences on Science and World Affairs have showed for decades that it is
193 not possible but absolutely necessary to talk with the other side in a confidential way even
194 on political issues. There are many examples in the Pugwash history where it was possi-
195 ble to organize a structured dialogue with colleagues in the east-bloc or the Middle East.
196 Arms control, non-proliferation and disarmament (restraint, cuts, reductions etc.) although
197 in danger, forms still a good basis for that assessing the consequences of new technologies in
198 security/military affairs: criteria and lessons. Science has here a role, too.

199 **2.4 Alexander Glazov, Belle II collaboration, DESY, Germany**

200 High-energy physics collider experiments are vast undertakings involving hundreds or even
201 thousands of physicists from various countries worldwide. For instance, the Belle II exper-
202 iment is conducted by nearly a thousand physicists from diverse nations, including Japan,
203 several EU countries, China, India, the USA, Ukraine, and Russia.

204 These collaborations are necessitated by the sheer scale of the projects, both technically
205 and due to the wide array of scientific topics they cover. International collaboration has been
206 crucial since the 1970s and 1980s, a period marked by reduced tensions between Eastern and
207 Western blocs and the disintegration of the Eastern bloc. The collaborative spirit thrived
208 from the 1990s to the 2010s during experiments at prominent institutions like CERN, DESY,
209 Fermilab, KEK, and SLAC.

210 The primary driving force behind these large experimental collaborations is fundamen-
211 tal research. Collaboration, diversity, openness, and publishing in open-access journals are
212 standard practices. Leadership positions are determined based on these criteria and scientific
213 excellence.

214 Financial support for high-energy physics research is substantial and primarily sourced
215 from national funding agencies. These agencies benefit significantly from high-profile re-
216 sults, including Nobel awards for discoveries such as the Higgs boson at the LHC and ob-
217 servation of charge-parity violation in *B*-meson decays at SLAC and KEK.

218 However, the war in Ukraine, initiated by Putin's regime, dealt a blow to this open collab-
219 orative environment. The international community's condemnation led to various sanctions
220 imposed by funding agencies, aimed at supporting Ukraine and punishing institutions that
221 did not condemn the war.

222 Different research collaborations responded differently to these requests. While vehe-

223 mently condemning Russian aggression and supporting Ukrainian scientists, collaborations
224 aimed to maintain scientific exchanges and assist Belarusian and Russian researchers who
225 condemned the war. One contentious issue was publication policy. For instance, the Belle II
226 collaboration developed a compromise where authors signed papers without affiliating insti-
227 tutes, by ORCID number [15], meeting both funding agency requirements and the principle
228 of non-discrimination based on nationality.

229 Sanctions in science have numerous negative effects with little benefit. Most Belarusian
230 and Russian scientists are strongly against the war. Isolating them might push them in the
231 opposite direction, limiting their opportunities for international publication and funding.
232 Additionally:

- 233 • Belarusian and Russian scientists have made significant contributions to building and
234 running experiments over decades. Discriminating against them is a severe punish-
235 ment with questionable justification.
- 236 • There is minimal risk of sharing dual-use technologies; scientists involved in military
237 projects in Russia do not publish in open-source journals.
- 238 • International collaborations have been crucial for young scientists from Belarus and
239 Russia, fostering mutual benefits for universities with strong research traditions.
- 240 • Sanctions on Russian institutions mean European collaborators miss out on future
241 projects in Russia, such as NICA, representing lost opportunities for research.

242 One reason for maintaining restrictions on Belarusian and Russian scientists is Ukraine's
243 uncompromising stance. Events allowing Russian participation were boycotted or threat-
244 ened by Ukraine, understandable given the circumstances. However, it is crucial to look
245 ahead, ending the war and enabling scientific and humanitarian exchanges. International
246 research in high-energy particle physics has proven to be an ideal platform for this.

247 **3 How can science still cooperate with Russia?**

248 The following text was first published in *Frankfurter Rundschau* on July 7, 2023 by Malte
249 Albrecht and Jürgen Scheffran *

250 "Networks of science with Russia and Ukraine are germ cells of the reconstruction of
251 trust," say Malte Albrecht and Jürgen Scheffran. In their guest article, they propose concrete
252 steps for a peace-promoting science.

253 War cannot be waged with soldiers alone. Scientists all over the world make wars possi-
254 ble only with their research. It is not only the natural and technical sciences whose research
255 leads to the development and use of armed drones and automated weapon systems.

*Malte Albrecht is a political scientist and chairman of the Natural Scientists Initiative - Responsibility for Peace and Sustainability (NatWiss e.V.), Jürgen Scheffran is a professor of geography at the University of Hamburg and a member of NatWiss.

256 Findings from mass psychology, media and opinion research are central components of
257 military strategy - propaganda is the best-known example. A significant contribution of
258 science to a peaceful world order is to take responsibility for one's own research results.

259 Scientific networks with Russia and other states have contributed to a more peaceful
260 world since World War II. They have created spaces for encounter and discussion. Even in
261 times of the greatest polarization and nuclear war threat of the Cold War, there was scientific
262 exchange between East and West. The findings of the Intergovernmental Panel on Climate
263 Change would not be possible without the contributions of Russian research. Without them,
264 we lack understanding the influence of the Arctic and the release of greenhouse gases from
265 Siberian soils on the global climate system and its tipping points.

266 The destruction of scientific networks does not help

267 The destruction of such networks aims at the political isolation of the Russian govern-
268 ment. But the legitimization of the Kremlin is not the task of research networks.

269 Therefore, the debate on sanctioning, i.e. suspension of scientific cooperation with Rus-
270 sia, ignores the actual question: How can scientists worldwide contribute to a more peaceful
271 and sustainable world?

272 One response to this is the full commitment to civil cooperation, as demanded by the Sci-
273 ence4Peace initiative at CERN and DESY in protest against the termination of cooperation
274 with Russia. They can help to contain the instrumentalization of science. Because the debate
275 about the pros and cons of joint research projects ignores the actual problem of international
276 research cooperation: the dependencies of research that counteract the constitutionally guar-
277 anteed freedom of science.

278 Armaments research is an example of this problem. It is dependent on third-party funds.
279 She must be secret. It leads to scientific block formation. It is part of the war logic. Scientific
280 cooperation with Russia therefore needs the same thing that applies to every other country:
281 a new strategy under the sign of responsibility. These include:

282 What can help

- 283 • A practical commitment to peaceful cooperation, for example in the form of civil clauses
284 for projects and allocation of funds. We need every engineer, every social scientist, ev-
285 ery economist to tackle the existential challenges of climate change, social inequality
286 and war by peaceful means.
- 287 • Democratization of academic self-government, especially the highest bodies, to pro-
288 mote decision-making processes from the bottom up.
- 289 • Incentives to ensure the peaceful use of research results, in particular of armament-
290 related research. This includes the abolition of patents on innovations that can help
291 solve the most pressing problems of humanity.
- 292 • A social debate about the financing of science to enable responsible and self-determined
293 research. Research is at the service of the future viability of those who finance it - the
294 citizens. Such networks with Russia and Ukraine are germ cells of the reconstruction

295 of trust and responsibility, of a new security architecture in Europe and the world that
296 involves the interests of all.

297 Numerous initiatives have spoken out in favor of maintaining the scientific networks
298 with Russia and Ukraine. This cooperation is part of the peace logic. It is worth being
299 expanded and defended.

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