


SCIENCE AND ORTHODOXY  
AROUND THE WORLD  
**1<sup>ST</sup> INTERNATIONAL CONFERENCE**  
National Hellenic Research Foundation

Athens,  
24-25 February 2017

MODERN SCIENCE  
AND THE ORTHODOX  
TRADITION.  
AN **UNEASY**  
RELATIONSHIP?  
ABSTRACTS





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# PROGRAM

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## FRIDAY 24 FEBRUARY 2017

9:00 | Gathering of participants & Registration

### SESSION 1

9:20 | Welcome by the Director and Chairman of the Board of the National Hellenic Research Foundation, **Dr Vasilis Gregoriou**

9:30 | Welcome by the Director of the Institute of Historical Research, **Prof. Taxiarchis Kolias**

9:40 | **Prof. Efthymios Nicolaidis**, Presentation of Project "Science & Orthodoxy around the World"

10:00 | **H.Em. Metropolitan of Mesogaia and Lavreotiki Nikolaos (Chatzinikolaou)**

Keynote address: "Modern Science and Orthodox Theology: An uneasy yet profound relationship"

10:40 | Coffee break

### SESSION 2

Chair: **Prof. Andrew Briggs**

11:00 | **Prof. Sergey Horujy**, The Patristic idea of cosmic liturgy as the basis of the relationship between Theology and Science  
Commented by: **Prof. Alexey Nesteruk**

11:45 | **Prof. William Shea**, Natural Science and Maximus the Confessor's World-affirming Theology  
Commented by: **Prof. Donald Yerxa**

12:30 | Discussion

13:00 | Lunch break

### SESSION 3

Chair: **Dr Vasilios Konstantoudis**

15:00 | **Prof. Nina Dimitrova**, Attitudes towards Science: A Review of Bulgarian Orthodox Thought in the Interwar Period  
Commented by: **Prof. Yakov Rabkin**  
Discussion

15:40 | **Prof. Magdalena Stavinschi**, Romania, a laboratory of the dialog between Science and religion  
Commented by: **Prof. Stoyan Tanev**  
Discussion

16:20 | Coffee break

### SESSION 4

Chair: **Prof. Kriton Chryssochoidis**

16:40 | **Rev. Prof. Christopher Knight**, Science, Theology and the Mind  
Commented by: **Dr Athanasios Papathanasiou**  
Discussion

17:20 | **Rev. Prof. Vassilios Thermos**,  
Orthodox Tradition and Science:  
an unmediated and thus irrelevant relationship  
Commented by: **Dr Dimitrios Kyriazis, MD**  
Discussion

18:00 | **Prof. Pantelis Kalaitzidis**, The Ambiguous Relationship between Orthodoxy and Science, as a Part of the Pending Discussion between Orthodoxy and Modernity  
Commented by: **Prof. Alexey Bodrov**  
Discussion

18:40 | Participants' Dinner

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## SATURDAY 25 FEBRUARY 2017

### SESSION 5

Chair: **Dr Petros Panagiotopoulos**

9:00 | **Rev. Prof. Doru Costache**, Father Dumitru Stăniloae, Contemporary Cosmology, and the Traditional Worldview  
Commented by: **Rev. Prof. Ioan Chirilă**  
Discussion

9:40 | **Rev. Prof. Dmitry Kiryanov**, Evolution and Orthodox Theology in Russia: an uneasy way to the dialogue  
Commented by: **Prof. Aristotle Papanikolaou**  
Discussion

10:20 | **Rev. Prof. Kyrill Kopeikin**, The Orthodox Tradition and personal view on the Universe  
Commented by: **Rev. Prof. Georgios Anagnostopoulos**  
Discussion

11:00 | **Prof. Vasilios Makrides**, Is Orthodox Theology an Empirical Science? Critical Reflections on a Contemporary Discourse in Orthodox Christian Contexts  
Commented by: **Prof. Peter Harrison**  
Discussion

11:40 | Coffee break

**SESSION 6: FOCUS POINTS**

Chair: **Dr Niki Tsironi**

12:00 | **H.Gr. Bishop of Christopolis Makarios (Griniezakis),**

The Pan-Orthodox Committee of Bioethics

Discussion

12:40 | **Prof. Alexey Postnikov, Prof. Kirill Diakonov and Prof. Tatiana Kharitonova,** Four Hundred Years Old Solovki Islands Monastery's Canals System and its influence on the Islands' Environment: a Unique Example of Favorable Changes due to the Long Period Amelioration (Results of Archival and Field Research)

Discussion

13:20 | Lunch break

**SESSION 7**

Chair: **Dr George Vlahakis**

15:30 | **Prof. Aleksandar Petrović and Aleksandra Stevanović,** The Dictionary of Technology as a Revival of Orthodox Culture and the Reimagining of Technology

Commented by: **Prof. Alexandre Kostov**

Discussion

16:10 | **Prof. Ekmeleddin İhsanoğlu,** Orthodox Physicians and Scholars in the Ottoman Empire

Commented by: **Prof. John Hedley Brooke**

Discussion

16:50 | Coffee Break

**SESSION 8: ROUND TABLE**

Moderator: **Prof. Ronald Numbers**

17:10 | The Science-Orthodoxy relationship today: New perspectives within contemporary paradigms

Participants: **Prof. Alexey Nesteruk, Prof. Efthymios Nicolaidis, Prof. Ronald Numbers and Prof. Gayle Woloschak**

19:20 | Conference summary and closing

Presented by: **Prof. Gayle Woloschak** and **Prof. Efthymios Nicolaidis**

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ABSTRACTS

## Father Dumitru Stăniloae, Contemporary Cosmology, and the Traditional Worldview

The remarkable contributions of Father Dumitru Stăniloae (1903-1993) ranged from traditional theology to patristics, from spiritual anthropology to asceticism, and from apologetics to mystical theology. Although his attentiveness to modern cultural trends and ideas has been at times noticed, his input in terms of bridging the traditional representation of reality and the contemporary sciences remains largely ignored. The fact of the matter is that, as a genuine neopatristic theologian, Father Stăniloae was aware of the challenges posed to the traditional worldview by the sciences, and also willing to initiate a constructive dialogue between the theological representation of reality and contemporary cosmology. Interestingly, he did not stumble on account of the ideological narratives in the guise of which scientific cosmology is sometimes promoted—from the atheistic propaganda of the communist regime of those days Romania to the agnosticism and aggressive scientism pertaining to various Western milieus. Instead, discerningly, without prejudice, he consistently referred to the available scientific data in order to give a new articulation to the traditional worldview. In so doing, he provided modern theology with a means to communicate the traditional worldview in intelligible ways to a contemporary, scientifically educated audience. Herein I consider the achievements of Father Stăniloae in the reformulation of the patristic representation of reality—particularly the views of Saint Athanasius the Great and Saint Maximus the Confessor—in conversation with aspects pertaining to the contemporary scientific paradigm. I address the author's cosmological elaborations by focusing on three main areas, namely, the movement of the universe, the rationality of the cosmos, and the anthropic principle. My goal is to show that for him scientific cosmology and the Christian worldview were, far from antagonistic, a match made in heaven.

The paper will be commented by  
**Rev. Prof. Ioan Chirilă**

## Attitudes towards Science: A Review of Bulgarian Orthodox Thought in the Interwar Period

The topic of the present study is the attitude of Bulgarian Orthodox thinkers (theologians, clergymen, representatives of the Orthodox intelligentsia) of the interwar period towards science and the social prestige of science; the discussion includes a comparison with recent trends. The efforts of Orthodox authors from the 1920s to the 1940s to affirm the vision of a harmonious coexistence of religion and science were chiefly motivated by pedagogical considerations, by the desire to overcome the influence of scientism in the formation of the young generation. The thematic fields in which they worked may be separated into two large groups: first, methodological issues of the relation between religion and science (respectively, between faith and reason) and second, responses to scientific critique of the Bible.

The last part of the paper deals with the present-day attitude towards science expressed by Orthodox thinkers in Bulgaria. The change that has taken place in the meantime both in the social-historical context and in science itself – in its “post-non-classical” stage – has been considered. The conclusions indicate the identity of standpoints concerning the methodological issues of the attitude of Orthodoxy to science, and the still insufficient amount of publications devoted to the Orthodox response to the new challenges coming from science. One of the heuristically valuable works in this respect is discussed.

The paper will be commented by  
**Prof. Yakov Rabkin**

## The Patristic idea of cosmic liturgy as the basis of the relationship between theology and Science

1. The paradigm of Cosmic Liturgy in the modern reconstruction. Starting ideas of Dionysios and st. Maximus and their development in Palamism and neo-Palamism. Advancing from the metaphor to the concept. Cosmic Liturgy and sacramental liturgy: common and distinct elements.
2. The transfiguration of the world as Man's cosmic mission. Cosmic Liturgy as an ensemble of religious, anthropological, social and technological practices. Relevant classification of these practices: practices dealing with the inner resp. the outer world; practices of exploring vs practices of transforming. Different theological contents of these kinds.
3. theology and science as necessary components in the framework of Cosmic Liturgy. The nature and the extent of their mutual independence. Grounds and ways of their collaboration.

The paper will be commented by  
**Prof. Alexey Nesteruk**

**Prof. Ekmeleddin İhsanoğlu**

## Orthodox Physicians and Scholars in the Ottoman Empire

The Orthodox Christians were the second biggest population of the multi-religious and multi-ethnic Ottoman Empire. Since its emergence as a small principality at the North West of Anatolia in the turn of the fourteenth century and its gradual expansion in the South East of Europe and the largest part of Anatolia, the Levant and North Africa, it incorporated Greek Orthodox, Arab Orthodox, Gregorian Armenians, Syrians, Chaldeans, Jacobites, Nestorians and Egyptian Copts, and they all became part of the Ottoman world.

The inter cultural and scholarly interactions among the integral parts of this vast mosaic of Ottoman population Muslims and non-Muslims, are areas of research and study that have been almost undiscovered, with the exception of few references to religious polemics at certain conjunctions. Thus, the scholarly exchanges and interactions among different religious and ethnic groups constitute a new area of research and investigation that needs to be explored.

Our knowledge today about scientific activities and scholars of the six centuries-long Ottoman history is much better than it was three decades ago thanks to publication of the 18 volumes of the History of Ottoman Scientific Literature [Osmanlı Bilim Literatürü Tarihi, edited by E. İhsanoğlu]. These volumes have showed us the existence of a Greek-Orthodox contribution to Ottoman science, yet the examples we will highlight in this paper clearly indicate the need for more concerted efforts to unearth more scientific literature in languages other than Arabic and Turkish. In the light of what we have at hand, we can surmise the following indications for scientific exchange among Greek Orthodox scholars and their Muslim counterparts and official patrons:

The first period, i.e. classic period where both Muslim and Greek Orthodox Ottoman scholars share the same classical traditions of Islamic science and the old Greek legacy;

The second period, where early contacts start with the rise of modern science;

The third period, with the prevalence of modern science and the integration of Greek citizens in Ottoman life after the proclamation of the Tanzimat (1839).

The futures of these contacts and exchanges demonstrate respective particularities according to the periods.

This paper will present some examples related to cases that can set the general parameters for future studies which need to be more detailed and more comprehensive through a wide network of cooperation.

The paper will be commented by  
**Prof. John Hedley Brooke**

**Prof. Pantelis Kalaitzidis**

## The Ambiguous Relationship between Orthodoxy and Science, as a Part of the Pending Discussion between Orthodoxy and Modernity

The dominant Orthodox discourse regarding the relationship of Orthodoxy to science claims that the former was never opposed to the latter, and that Orthodoxy was always open to the scientific research and progress. However, a careful reading of the encounter between Orthodoxy and science in the time of the Enlightenment, as well as the attitude adopted by many Orthodox to a wide range of crucial issues such as the use of the historico-critical method in biblical and theological sciences, the bioethical questions, the evolution theory, the rapid development of technology (virtual reality, internet etc) or questions of gender and sexuality, call for a reappraisal and a more critical and balanced evaluation of the relationship between Orthodoxy and science, and to an honest discussion of the problems this relationship involves. The paper seeks to engage in this study under the hermeneutical angle of the still pending dialogue between Orthodoxy and Modernity.

The paper will be commented by  
**Prof. Alexey Bodrov**



**Rev. Prof. Dmitry Kiryanov**

## Evolution and Orthodox theology in Russia: an uneasy way to the dialogue

One of the sharpest controversies in modern Christian thought is the question about the relationship between religion and science in general, and Christian belief and the evolutionary doctrine specifically.

Traditional Christian theology considered mankind as the apex of God's creation which is distinct from the rest of the creation because it was created in God's image. On the contrary, Darwinism stands rather critical to absolutist statements concerning a place of Humankind in Nature. Consequently, we have today a very complex picture of the relationship between Orthodox theology and the evolution in the Russian religious context. In the 1990s, influenced by American creationism, Russia had its own creationist movement founded, supported by a common negative relationship to the previous atheistic worldview. Thus, at the level of popular literature for church people, almost any book about science and religion was considered written from the point of view of the so called "scientific creationism" of the young Earth, with only one specific chart to make accent on literal understanding of Genesis by some Church fathers. Although this approach never became the official position of the Russian Orthodox Church, and does not represent the mainstream of Russian Orthodox theology, it is obvious that it influences the attitude towards the evolution in almost any Orthodox school and Sunday school.

There is some interconnection between "scientific creationism" of young Earth and the so called Intelligent Design Theory. Although the ID theory does not have many adherents in Russia (main authors weren't translated into Russian) there were some official negative reactions by the Russian Church to resolution PACE 2007, which can be explained as a misunderstanding of this document.

Another way to reconcile the biblical picture of origins with modern science, which is very popular in Russian theological milieu, is to assert that after the Fall our world changed completely. This approach is very popular in orthodox handbooks for theology students, and this line of understanding contains certain nuances, such as the so-called theology of "garment skins". From this point of view science basically is not capable of saying anything authentic about the past of the Universe, the Earth and Humankind. It is because the laws of life in the world after the Fall have radically changed, and thus the world began "to look old" or "to look sinful". For example, the theology of "garment skins" supposes that the human being after the Fall is radically changed in such a way that we can see in our genome the consequences of this Fall as retroviruses. From the perspective of this approach, evolutionary biology is constantly deceived in studying the fallen world, "as though it evolved naturally". As it seems to me, this point of view posed another problem such as what a Human is and what our relation to Adam has been before the Fall and after.

Only a small minority of Orthodox thinkers in Russia are ready to accept evolution seriously and try to incorporate it into their theological understanding. And these attempts are very different in their own approaches from the very provocative viewpoints of the Evolutional theology of P.Teilhard de Chardin to the slightly conservative approach that includes some kind of "Neolithic Adam". But if we should accept evolution seriously, we need to develop a certain kind of Evolution theology. This, however, is a task for the future.

All these approaches will, to some extent, agree with scientific and doctrinal representations, however everyone can invoke particular objections. From our point of view, it would be irregular to consume the entire opposition of the Divine action carried out by the Creator through processes of Nature and the special creative intervention, demanding the exaltation of Nature on a broader scale, and Human nature, in particular, on the qualitatively other level of life.

The paper will be commented by  
**Prof. Aristotle Papanikolaou**

**Rev. Prof. Christopher Knight**

## Science, Theology and the Mind

Cognitive science has in recent decades stressed the correlation between human mental processes and physical brain states. For some theological scholars in the West, these scientific perspectives have reinforced the non-dualistic picture of the human person that Christian theology has traditionally presented, and have caused a revival of the notion that eternal life must involve some kind of resurrection body. However, this revived understanding is often still thought about in terms of a model of the mind that focuses on characteristics such as memory and discursive, rational abilities. More traditional theological concepts - with their focus on the nous - are largely ignored. Moreover, a kind of materialism (albeit not purely reductionist) is still often assumed. In this paper, an alternative understanding, based on Orthodox Christian perspectives, is explored.

The paper will be commented by  
**Dr Athanasios Papathanasiou**

**Rev. Prof. Kyrill Kopeikin**

## The Orthodox Tradition and personal view on the Universe

Modern science arose in Western Europe in the context of the Catholic and Protestant traditions, and only then came into contact with the Orthodox tradition. Perhaps that is why science was often perceived as something alien and even hostile to orthodoxy. Despite this, science is based on the biblical premise that God gives His Revelation in the two «books» - the Bible and the Book of Nature. Between these two books there is no contradiction, because they are created by a single Author. European Science explores the structure of the Universe, the «syntax» of the Book of Nature. The essence of the objective measurement method is that we study the «ratio» of one element (στοιχείον) of the Universe to another, and describe the shape of this relationship in a formal language of mathematics. This method of description is extremely effective, but it leaves aside all personal, subjective, psychic. The resulting picture of the world in the end turns out to be not only godless, but also inhuman. However, this is not the whole world, it is only its structure, syntax, which must be replenished to the semantics and pragmatics. As science emerged in the biblical theological context, its hermeneutical semantic interpretation should also be made in the biblical context. If the Bible is revelation of the Creator, then it means that God reveals to us His own view of the Universe. We should try to stand on His point of view in order to understand Him. But is it possible? Amazingly, it is mathematics that is used as the language of science, giving hope for such an opportunity. One can see the similarity between the creation of the mathematical universe and the creation of the world, described in the Bible. Just as God creates the world ex nihilo, a mathematician first creates an empty set, and then out of it - the entire mathematical universe. We know the process of creation of mathematics from the «inside». Surprisingly, exact correspondence of the «internal» mathematical model of the world of external reality allows us to suggest that this personal existential content can also be extended to the entire Universe. Such filling structural mathematical model of the world by living existential content allows to incorporate it organically into the theological picture of the world.

The paper will be commented by  
**Rev. Prof. Georgios Anagnostopoulos**

**H.Gr. Makarios Griniezakis,  
Bishop of Christopolis**

**Prof. Vasilios Makrides**

## The Pan-Orthodox Committee of Bioethics

The new discipline of Bioethics establishes its presence as an interdisciplinary science, since it embraces all sciences. This cooperation does not exclude the discipline of theology, which holds an important place in Bioethics. Indeed, some argue that theology when it deals with aspects of human ontology is Bioethics, while others point out that we cannot make bioethics decisions without using the language of theology. Bioethics for the Orthodox theologian is a science that is considered and examined in the light of hagiographic and patristic teaching, but also through personal and empirical experience. The Church does not examine bioethical issues through an academic prism but empirically. And those who grapple with bioethical issues will not help if their theology is only academic and epistemological. The solutions of Orthodox bioethics are the results of God's light and divine grace.

It is a fact that there is a weakness on the Orthodox side in reaching unanimous decisions in general, and specifically on bioethical issues. To address this issue the Synaxis of the Primates of the Orthodox Churches, held in Phanar in Constantinople between 9-12 October 2008 under the chairmanship of His All Holiness the Ecumenical Patriarch Bartholomew, reaffirmed "the decision to proceed with the necessary actions to establish a Pan-Orthodox Committee to study bioethical issues, on which the world is waiting for Orthodoxy to take a stand." The first meeting of the Inter-Orthodox Committee was held in Crete in the premises of the Orthodox Academy in Kolymbari, Kissamos, from 24 to 27 May 2011. In its first meeting the Committee did not take any specific decisions on any bioethical issue, however, it dealt with how it will apply methodology in its work and what will be the process of decision making.

Unlike other Christian Churches, the Orthodox Church held no councils - see 2nd Vatican Council - in order to form a new ethos or to introduce into society a new, more practical and utilitarian morality. The Orthodox Church is still relying on the decisions of the seven Ecumenical Councils the Holy Bible and the Sacred Tradition. This means that everything stated by the Orthodox Bioethics Committee should be in accordance with what has been said in the decisions of the Ecumenical Councils of the Church Fathers. The Orthodox Church is not going to refuse values and beliefs that add meaning to our lives, in the name of liberal secular ethics and a secularized spirit of compromise. So it takes courage and bravery, because the answers given by the Church may not be liked by many. We must not forget, however, that the work of the Inter-Orthodox Commission for this reason is special and unique. It is called to apply eternal principles to finite situations.

## Is Orthodox theology an Empirical Science? Critical Reflections on a Contemporary Discourse in Orthodox Christian Contexts

Is Orthodox theology an empirical science? This question is not a rhetorical one and should not occasion any surprise, at least to those categorically claiming that theology in general lacks a scientific basis and a concomitant status. Yet, in the present case, it is specifically about Orthodox theology as clearly differentiated from Western Latin theology. It is about a discourse articulated in various Orthodox contexts during the recent decades and positing the issue of the relations between science and Christian theology on another level. One of the main promoters of such ideas was the Greek-American theologian John Romanides (1927-2001), who left a vivid legacy among various Orthodox circles in Greece and abroad. The whole issue is closely related to the Neo-Patristic revival and the rediscovery of the Hesychast theology of Gregory Palamas (1296-1359). In the context of this modern Neo-Palamite renaissance, this type of theology has been considered as the quintessence of Orthodoxy and as being diametrically opposite to the Latin rationalist and speculative theology. Thereby, the problems that appeared between science and Christian theology are mostly attributed to the excesses of Latin speculative theology and broadly to the Western Christian deviation. On the contrary, Eastern Orthodox theology, in its authentic expressions, is believed to follow another method, which is strongly empirical and very close or even identical with the method of modern science. Lived experience of the divine is thus a presupposition of Orthodox theology, a fact underscoring its highly empirically and accordingly verifiable basis. In this paper, this discourse in its various facets will be critically examined and assessed, especially in the light of its potential contribution to the contemporary dialogue between Orthodox Christianity and modern science.

The paper will be commented by  
**Prof. Peter Harrison**

**Prof. Aleksandar Petrović**  
**Aleksandra Stevanović**

## Dictionary of Technology as a Revival of Orthodox Culture and Reimagining of Technology

It is often considered that Orthodox theology and modern science are divided by a deep hiatus of historical development. However, secular experience of Orthodox theology could still be alive and used as a vehicle for a critical reconsideration of the modern world. A good example for this is a manuscript which appeared in 1981 – the Dictionary of Technology – as the persuasive modern revival of Orthodox culture. Hand-written and illuminated in the style of Serbian medieval culture, the Dictionary does not consider Orthodox legacy to be merely of significance for its antiquity, and eligible today only for religious cult, but as a kind of epistemological instrument or distant mirror that reflects positive and negative effects of technological modernization. Its appearance in the 1980s in Serbia was a big culturological and political surprise, since the prevalent culture of Yugoslavia was exclusively modern and atheist. The fact itself that the Dictionary in its Orthodox medieval form does not discuss theological, but technological matters brings Orthodoxy closer to the center of modern culture. It also represents an implicit critique of the ideology of modernization self-sufficiency by preventing its favorite dichotomy of modern and non-modern entities.

In the Dictionary of Technology, postmodern culture meets Orthodoxy through the merging of different scripts (Latin, Cyrillic, Greek), and through the concepts of the 'death of the author' and the 'death of the subject'. Cartesian subjectivity is abandoned, since the names of the authors, as well as the illuminator, remain written in the script itself, but not easily noticed. Such idea has roots in medieval manuscripts, where the authors would not sign their work since the work itself is more important than the name of the author, contrary to modernistic trend of advocating originality and creation ex nihilo.

The Dictionary is difficult to define in terms of a disciplinary domain, for in its 162 entries it encompasses different spheres, such as philosophy, theology, literature, and arts which permeate each other. Christian Orthodox legacy is quite distinct – illuminations, graphics, format, handwriting, Cyrillic and Greek script, parts from Gospels, the continuation of medieval Orthodox contemplation, Platonic thought, as well as the concept of selfhood; all directed towards the essential understanding of technology. What makes this script unique is the fact that it relates to Church manuscripts and Gospels and Christian thinkers, philosophers and a plethora of distinguished authors; it is based on Orthodox heritage, but examines technology as a modern form of perennial eschatologies.

Considering these aspects, the paper explains the two levels of the presence of Orthodoxy in the Dictionary of Technology, first in content – its aforementioned complex theoretical concepts so as to explore the hermeneutics of technology;

second in form – its calligraphy, graphics, illuminations, script, that is, its richness of design. The format of the manuscript is non-practical since it is slightly larger than the one of a then major newspaper format. Contrary to automation and mechanist action, hand, which resists technology, creates freely finding accordance with the thought, so that this represents a form-content harmony related to the medieval creativity canon. Therefore, the entire artistic, technical and philosophical formation of Dictionary represents a consistent, not only theoretical, but also practical reimagining of technology and revival of comprehensive potential of Orthodoxy. Therefore, Dictionary of Technology needs further examination and discussion, particularly in the Orthodox prism. The paper would survey critical thought regarding technology, from the perspective of Orthodox religion, and through Dictionary of Technology revitalize Serbian medieval legacy neglected in the time of Dictionary appearance.

The paper will be commented by  
**Prof. Alexandre Kostov**

**Prof. Alexey Postnikov**  
**Prof. Kirill Diakonov**  
**Prof. Tatiana Kharitonova**

# Four Hundred Years Old Solovki Islands Monastery's Canals System and its influence on the Islands' Environment: a Unique Example of Favorable Changes due to the Long Period Amelioration (Results of Archival and Field Research)

**Introduction** In Russia monasteries and convents have arisen in the Eleventh Century and acted not only as the religious centers, but also as centers of cultural and educational development. They stored huge collections of manuscripts and books. In the XIV-XVII centuries monasteries began to play an important role in the development and Christianization of the Russian North. A number of the most known monasteries had been founded on the territory of the East European (Russian) Plain: Ipatyevsky (Troitsk) in the mouth of the Kostroma river falling into Volga (1330); Savvino-Storozhevsky near Zvenigorod (1398); Kirillovo-Belozersky on the coast of the Siverskoe Lake (1397); Ferapontov on the Borodavsky lake in 20 km from the Kirillovo-Belozersky monastery; Bohr Pafnutyev near Borovsk in the Kaluga region (1444); Borisoglebsk in Rostov Veliky (Rostov the Great) on the River Ust'e (XIVth century); Iosifo-Volokolamsky in 20 km from Volokolamsk (1479); The Solovetsky Monastery dedicated to Holy Transfiguration of Our Lord Jesus on islands of the White Sea in 165 km to the south of the Polar Circle (Fifteenth century).

**Specifics of natural environment of the northern Russian monasteries** The term 'North of Russia' is not very strict. For those who live in Central and Southern Europe, natural zones of coniferous - broad-leaved forests, taiga, forest-tundra, and tundra are correct to see it as 'North'. The main characteristics of these zones are: excessive humidity, due to many rivers; many huge marshlands; lakes, marshy forests, poor soils (excluding soils of floodplain meadows).

**Public functions of monasteries** The monastery owned lands where they developed agriculture and husbandry for their own use and trade; This made monasteries not only defensive, religious, charitable, and educational establishments but also economic centers. At an early stage of its existence the monastic economy has been focused on production for own consumption. But later, first of all, a part of their agricultural production they began to sell. The range of production was various: products of agriculture and livestock production,

salt production, fishery, reindeer breeding. The most successful in trade were monasteries of the North - Solovki, Kirillo-Belozersky, Nicolo-Korelsky, etc.

**Specifics of adaptive and constructive environmental management on the Solovetsky Islands** The rapid growth of Solovetsky Monastery in the Sixteenth century resulted in a need for improving its internal means of communication and water supply of monastery. At the initiative of the abbot of the monastery Philip (in the world - Fedor Stepanovich Kolychev /1507 - 1569), for the solution of these problems, the construction of a uniform system of channels was initiated on the Big Solovki island which connected numerous fresh-water lakes to the Sacred lake located under the monastery walls from the outside, opposite to the White Sea coast. The channels laid between lakes in many places crossed swamps and areas of the boggy tundra, thus assisting the amelioration of these territories: lakes became flowing limiting their bogging, and swamps, being drained, freed the areas with woods over time, or became meadows and arable lands used by monks and monastic trudniks (volunteer workers) for livestock production and agriculture. The expansion of the channel system resulted in a need for its regulation by means of locks, and, as navigation developed, dams and locks were constructed. In the beginning, these technical actions were carried out by purely experimental methods of "trial and error", and from the 18th to the beginning of the 20th century, the arrival at the monastery of monks with a secular education, the design and construction of hydraulic engineering constructions at a technical level corresponding to the period began to develop. Continuous intake of fresh water to the monastery allowed monks to provide an almost autonomous existence; a water supply system, baths, a water-mill, laundry and, at the beginning of the Twentieth century, one of Russia's first hydroelectric power stations were constructed.

**Conclusion** The expansion of the channel system caused the requirement to regulate it by means of locks, and the development of navigation brought the construction of dikes and lands. Drainage led to the expansion of arable, pastures and haying grounds, as well as forested territories. Based on a single hydro-technical system, a natural and economic complex of the monastery was formed, and gradually a modern structure of types of environmental management developed, which included water management (drinking water supply, transport), agriculture (crop production, livestock production), forestry and landscape. Energy of water flows was also used. The adaptation of the direction of environmental management was fully apparent in agriculture. The local population was used precisely according to intra-landscape conditions: specifics of local climates and even microclimate, nature of a relief and natural fertility of soils. The Solovki cultural landscapes created by the beginning of the XX century were a synthesis of traditional high eco-friendly environmental management and urgent engineering decisions. Catalogued by us as monuments of science and technology history during the international expeditions (under scientific supervision of Professor Alexey Postnikov) of the Institute of the History

**Prof. William Shea**

of Sciences and Technology named after S. I. Vavilova of the Russian Academy of Sciences and Department of the Landscape Studies and Physical Geography M. V. Lomonosov Moscow State University Geographical faculty.

**Main conclusion of these researches** The development of the channel system has led to a significant improvement of the environment of the island, which was dominated by the first monks upon their arrival, and we witness prevailing of the forest-tundra, and now the middle taiga and in places even the South taiga, landscapes.

## Natural Science and Maximus the Confessor's World-affirming theology

A fruitful dialogue between science and religion requires an openness of mind among scientists and a positive attitude towards nature among theologians. Maximus the Confessor can be a source of insight inasmuch he sees the natural world, contemplated in the light of revelation, as a source of wisdom. For him, genuine knowledge is gleaned not only from the "book of Scripture" but also from the "book of nature". As he put it, "The stars in the heavens are like the letters in a book". If the letters of the alphabet bring to mind words and meanings, the stars and the planets can also become a legible script. The wise person sees the cosmos as an inexhaustible treasure-house of knowledge, for no being leaves him untouched and everything provides food for his intellectual and spiritual nourishment.

We shall briefly explore the implications of Maximus' view in the climate of our own age.

The paper will be commented by  
**Prof. Donald Yerxa**

## Romania, a laboratory of the dialog between Science and religion

Christianity reached very early the land that is now Romania. Saint Andrew was the first to preach the Word of God in the land of Dobrogea – the old Scythia Minor. This is where Dionysius Exiguus lived in the sixth century; he was the author of the calendar used everywhere around the world, both in Christian and non-Christian countries.

Romania itself is a kind of oxymoron, as it is at the same time a Latin and an Orthodox country. Thanks to its Latin characteristics, it has the privilege of being in dialogue with the Catholic Church and with various religious traditions in Europe and Latin America.

It was not by accident that the first Orthodox country visited by a Catholic Pope, after nearly one thousand years, was Romania (i.e. the visit of Pope John Paul II in 1999); nor was it by accident that the first Orthodox patriarch celebrating Mass in the Vatican, in 2002, together with a Catholic pope, was Teoctist, the Patriarch of the Romanian Orthodox Church.

These were perhaps the reasons that led to the opening of a dialogue between science and religion in Romania; in 2001, the workshop “Science and Religion - antagonism or complementarity?” was the first workshop dedicated to this subject held in a post-communist Orthodox country.

The workshop and the debates it hosted proved that a fruitful dialogue can be successfully developed in this part of Europe. In fact, for almost ten years, the John Templeton Foundation funded here three major programs: „Science and Religion in Romania, A project for Romania, as laboratory for post-communist countries”, 2004-2006; „Science and Orthodoxy. Romanian Network (A bridge Project)”, 2006; „Science and Orthodoxy. Research and Education”, 2006-2009.

Seven centers were set up in major academic locations in Romania and France, where many debates took place, important research was carried out, academic courses for students of different faculties were organized, magazines and nearly 80 books (original or translations) were published, and several local, national and international conferences were organized. All were well publicized through newspapers, television or the Internet.

In fact, most of these activities are still being conducted today and can be seen at the website of the Association for Dialogue between Science and Religion in Romania – ADSTR, which has recently expanded into the Institute for Transdisciplinary Studies in Science, Spirituality, Society - IT4S.

In this paper I am going to share some of the experience gained in Romania in recent years regarding the dialogue between science and orthodoxy.

## Orthodox Tradition and Science: an unmediated and thus irrelevant relationship

Modernity has been the condition that generated science as we know it today. When theology encounters science it is the logic of modernity that precedes and mediates this dialogue. Historical developments hindered the Orthodox Church and thought from fully encountering modernity, and this deficit remains still active. As a result, every time orthodox tradition comes upon a science and involves into an epistemological dialogue with it, a lack of relevance appears because the basic principles of modernity that shaped science are not yet adequately elaborated by theology. This phenomenon affects the outcome of epistemological dialogue between orthodox tradition and science because of the former’s somehow hostile attitude toward the mediator of modernity. Besides, it often creates a gap: scientists who may be highly devout Christians, as well as eminent scholars, seem unable to bring the two areas to a consistent and fruitful dialogue and keep them isolated. It seems they can combine piety and science, but not theological thought and science.

## ROUND TABLE

# The Science-Orthodoxy relationship today: New perspectives within contemporary paradigms

Participants **Prof. Alexey Nesteruk, Prof. Ronald Numbers, Prof. Gayle Woloschak and Prof. Efthymios Nicolaidis**

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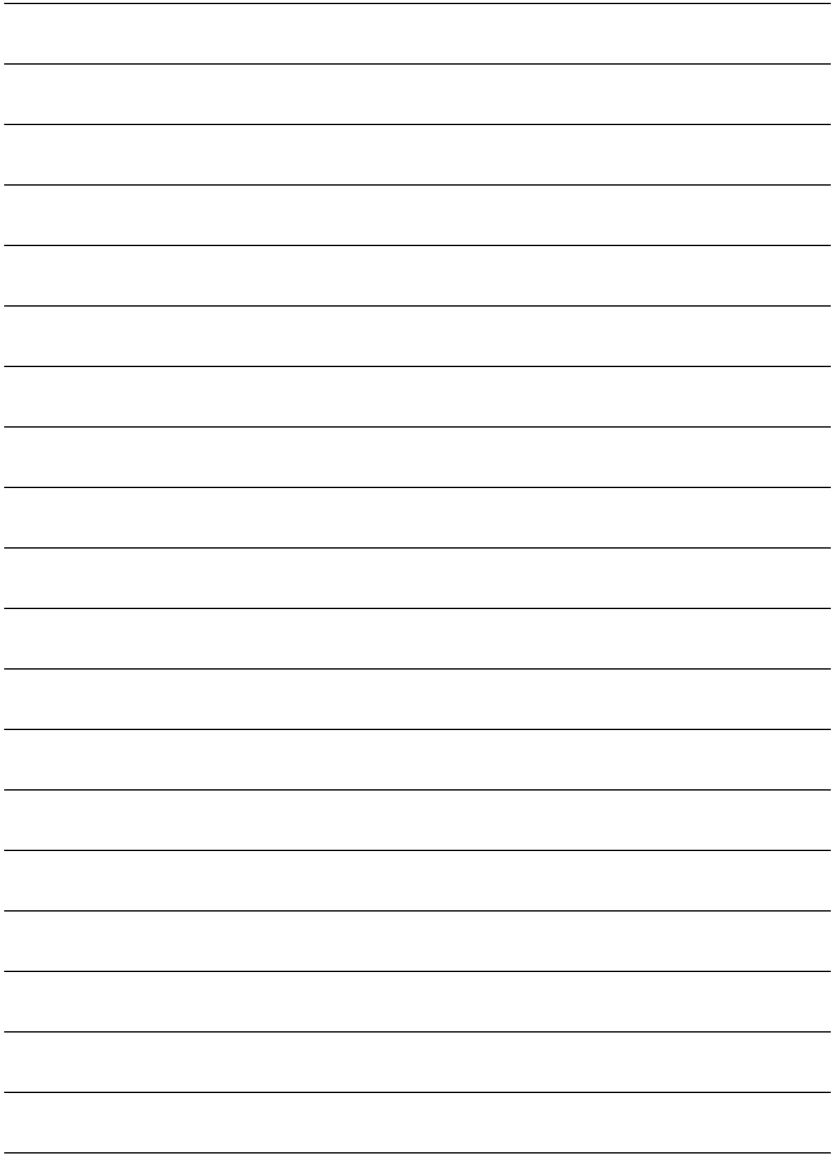
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The First International Conference of SOW focuses on the nature of the relationship between modern Science and Orthodox Christianity with its centuries-old tradition. Orthodoxy today shares a variety of –sometimes ambiguous– attitudes towards modern Science shaped by the texts of the Church Fathers, medieval and modern theologians and scholars, as well as contemporary social realities. On the other hand, modern Science, which sprung from the seventeenth-century quest by Western-European philosophers for rationality, is faced with crucial and uneasy questions about the meaning of life and the position of Humankind within the natural world.

The main goal of the Conference is to define the patterns of the Science-religion relationship in the Orthodox world, especially in the light of the most recent trends in both Science and Theology. Is this a relationship of dialog or conflict? Of integration or independence? What is the impact of the revival of patristic studies and new theological currents on the relationship? But also what is the relevant impact of new scientific discoveries on the image of the Human and the Universe? Has the modern Science-religion dialog in the West influenced Eastern Christianity in its effort to create new perspectives and concepts in response to new challenges? These questions are crucial for understanding and mapping the current science-religion dialog in the Orthodox world, and apart from recording given views and opinions, Project SOW aims at inciting new thoughts and ideas in the effort to advance the dialog among all interested parties.

*The working language of the Conference will be English.*



[http://project-sow.org/first\\_conference](http://project-sow.org/first_conference)

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ΕΘΝΙΚΟ ΙΔΡΥΜΑ ΕΡΕΥΝΩΝ  
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