United Nations Educational, Scientific and Cultural Organization

IUGS International Union of Geological Sciences

Annual Report* of IGCP Project No.610

***NOTE: MAXIMUM LENGTH OF THE TEXT REPORT IS 5 (FIVE) PAGES (starting from question 1). SINGLE SPACE, 12 POINT FONT. REPORTS EXCEEDING THIS LENGTH WILL BE RETURNED TO THE AUTHOR(S) WITH THE REQUEST OF REDUCING THE TEXT TO THE ABOVE STANDARD.**

A LIST OF PUBLICATIONS HAS TO BE ADDED AS AN ANNEX.

***REMINDER: IF THIS IS THE FINAL YEAR OF YOUR PROJECT, PLEASE SUBMIT A REVIEW ARTICLE ABOUT YOUR PROJECT TO THE IUGS JOURNAL '*EPISODES*'.**

The scientific information in this report will further be used for publication on the IGCP website hosted at UNESCO (please feel free to attach any additional information you may consider relevant to the assessment of your project).

IGCP project short title: "From the Caspian to Mediterranean: Environmental Change and Human Response during the Quaternary"

Duration: 2013-2017

Please tick this box if the report is for a Project on extended term (OET)

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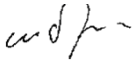
Signature:		Prof. Dr. Mehmet Celal ÖZDOĞAN
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1. Website address(es) related to the project

http://www.avalon-institute.org/IGCP610/index.php – main
http://www.geogr.msu.ru/science/projects/unesco/
http://www.geoecomar.ro/website/proiecte.html
https://www.facebook.com/groups/180481035443572/
http://vk.com/album115218532_181815723

2. Summary of major past achievements of the project. Three years of IGCP 610 activity have been carried out in strict agreement with the Working Plan [http://www.avalon-institute.org/IGCP610/work_plan.php]. The one exception was the creation of the GIS-aided Interactive Data Base that was postponed until the end of the project. The following activities have been performed: (1) The First, Second, and Third Plenary Conferences and Field Trips in Georgia, Azerbaijan, and Russia, in October 2013, 2014 and September 2015, respectively. (2) Field work in various areas of the "CORRIDORS" enabled the collection of several hundred samples for treatment them in different laboratories by various techniques. Without IGCP 610, no access and sampling of those geological sequences and artifacts would have been possible. (3) Summer schools for young researchers in Kalmykia (2014), Danube Delta on-board the floating laboratory boat "Halmyris" (2013-2015), and Turkmenistan (2015). (4) Workshops in Sozopol (2013), Moscow (2014, 2015), Kirklareli (2014), and Ahtopol (2014). (5) Presentations of IGCP 610 activities during special sessions of large international fora: "Under the Sea: Archaeology and Palaeolandscapes" (Szczecin, Poland, 2013), "Recent Problems on Lithology of Sedimentary Basins of Ukraine and Adjacent Territories" (Kiev, Ukraine, 2014), "Geography and Geology at Higher School: the Modern State and Problems" (Odessa, Ukraine, 2014), the Markov Readings "Actual problems of the Pleistocene palaeogeography and stratigraphy" (Moscow, Russia, 2015), STRATI 2015 (Graz, Austria, 2015), GSA 2015 (Baltimore, USA, 2015). (6) Publications of Project results in special issues of an international scientific journal, e.g., "Stratigraphy and Sedimentology of Oil-Gas Basins," *Quaternary International* (in press) as well as peer-reviewed Conference Proceedings (Tbilisi, 183 pages), Baku (186 pages), Astrakhan (207 pages) and Field Trip Guides of the respective conferences (http://www.avalon-institute.org/IGCP610/index.php). (7) Disseminating the project events and activities via regular updating of Project websites, mailing list (about 1500 e-mail addresses), and social networks (Facebook and Вконтакте). (8) Linkage to a number of international projects (see 3.7 for more details).

Scientific activities: (1) establishing an integrated Reference List of main publications, a majority of which are published in Russian—their titles required transliteration and translation into English; (2) collecting a data set on chronometric data; (3) correlating the Regional Stratigraphic Scales; (4) establishing a reference collection of Ponto-Caspian foraminifera (supplemented by SEM images) and mollusks; (5) collecting a series of regional paleogeographic and geological maps; (6) continuing the development of a common geochronological framework necessary for correlating major events in human prehistory and history with global environmental changes; (7) continuing collaborative studies on hard-shelled meiobenthos and palynomorphs from the Danube Delta front to the outer shelf; (8) developing models for (a) the filling of the Black Sea basin by Mediterranean salt water during the Holocene, (b) the degradation of the Paratethys into the Capsian and Black Sea; and (9) studing the Quaternary stratotypes and archaeological monuments in countries surrounding the "CORRIDORS." **Social benefits:** implementing cultural heritage projects, open-air site museums, training centers for conducting experimental research, working together with local

Governmental and Non-Governmental Organizations; enhancing understanding of the links between environmental change and human adaptation, promoting the wise use of the Earth as a human habitat, and preserving human heritage by addressing and clarifying existing questions about interlinks between human adaptive strategies and environmental changes.

3. Achievements of the project this year only. ***3.1.General scientific achievements:*** (1) Reference List of main publications on Project subjects; (2) Data set on chronometric data; (3) Regional stratigraphic scales; (4) Reference collection of Ponto-Caspian foraminifera (supplemented by SEM images) and mollusks—all stored in the Paleontological Museum of Odessa I.I. Mechnikov National University, Ukraine; (5) Series of regional paleogeographic and geological maps of different areas of the "CORRIDORS"; (6) Collaborative studies on hard-shelled meiobenthos and palynomorphs; (7) Mathematical modeling of (a) the filling of the Black Sea basin by Mediterranean water during the course of the Holocene transgression, and (b) the degradation of the Paratethys and the formation of the Black and Caspian basins; (8) In-depth study of the Quaternary stratotypes and archaeological monuments in countries surrounding the "CORRIDORS"; (9) Biostratigraphic analysis of five boreholes obtained in the North Caspian where two marine strata that are absent on the coasts were discovered; (10) Dendroclimatological analysis of some ancient tree species discovered for the first time in the Western and Central Kopetdag, Turkmenistan; (11) Geological and geophysical mapping of the Romanian continental shelf resulting in a new sedimentological map with scale 1:50,000; (12) New study of the Danube Deep-Sea Fan structure by new sub-bottom and seismic lines resulting in the discovery of new zones of mass wasting on the continental slope. Material collected in the course of field work is currently being studied by multidisciplinary approach using palynologic, lithologic, geochronologic, malacofaunal, and micropaleontologic methods. ***3.2. List of IGCP project meetings/symposia and IGCP related meetings/symposia with exact attendance (if possible) and number of countries:*** IGCP 610 Third Plenary Meeting and Field Trip in Astrakhan, Russia, 22-30 September 2015, was attended by about 60 scientists from 9 countries. It must be noted that the number of contributors was 107 from 14 countries, but not all of them were able to come, apparently due to understandable geopolitical reasons. IGCP 610 Special Technical Sessions were carried out at the Markov Readings in 2015 year "Actual problems of the Pleistocene palaeogeography and stratigraphy" (June, 2015, Moscow, Russia, 30 attendees from five countries), STRATI 2015 2nd International Congress on Stratigraphy (July 2015, Graz, Austria, 12 participants from 5 countries), GSA 2015 (November 2015, Baltimore, USA, 30 participants from six countries). ***3.3. Educational, training, or capacity building activities related to the IGCP project and IGCP project participants.*** Summer field schools for young researchers were organized in the Danube Delta on-board the floating laboratory boat "Halmyris" (summer 2015, organizer N. Panin) and Turkmenistan (September 2015, organizer R. Kurbanov). Joint (Russia-Denmark) **field work** in the Lower Volga area and Kalmykia (May 2015, organizer T.A.Yanina) focused on preparation of the field trips during the Third Plenary Conference in Astrakhan. Research cruise on R/V "Mare Nigrum" in the Black Sea (summer 2015, organizer N. Panin). Winter field work in the Manych valley to be organized in December 2015 (http://vk.com/club102019150). These fieldwork projects permitted collection of several hundred samples that were treated in different laboratories by various techniques. Without IGCP 610, no access to, or sampling of, those geological sequences and artifacts would have been possible. **Involving** young researchers and students from Russia in organizing the Third Plenary Meeting and Field Trip to increase their experience, organizational skills, and abilities to cultivate traditions of "European style" scientific fora as well as scientific discussion and informal meetings. **Promoting** the preparation of BS (Mudryk I., Ukraine), MA (G. Oschepkov, N. Tkach, Russia), and PhD (N. Kerimova, Azerbaijan; O. Demchenko, T. Kondaryuk, E. Rohozin, Ukraine; H. Laermanns, Germany; R. Makshaev,

Russia) theses under the supervision of key IGCP 610 scientists. **Promoting** a multidisciplinary approach in paleoenvironmental studies that encourages students in geology and geography to take archaeological courses and *vice versa*, thus stimulating teachers of the universities participating in IGCP 610 to modify their curricula. **Enhancing** the direct contacts between western and eastern youth, creating the background for better understanding of modern priorities in the developing world of science and humanities. Exposing the younger generation in developing countries to new analytical techniques and state-of-the-art data interpretation. **Teaching** the public about environmental evolution during the last climatic cycle and possible consequences of GCC anticipated to take full effect in this century. **Providing** consultation on stratigraphy, paleogeography, palynology, macro- and microfauna to interested parties from Russia, Azerbaijan, Ukraine, Iran, Bulgaria, the Netherlands, and Georgia. The Romanian partner—GeoEcoMar—conducted intensive educational activities at Bucharest and Ovidius universities, and participated at the elaboration of the National Research and Innovation Strategy for the Romanian Danube Region. ***3.4. List of countries involved in the project (please *indicate the countries active this year (marked by asterisk):*** Azerbaijan*, Belgium, Bulgaria*, Canada*, Georgia*, Germany*, Greece, France, Israel, Italy*, Kazakhstan, Latvia*, Romania*, Russia*, The Netherlands*, Switzerland, Turkey*, UK*, Ukraine*, and USA*.

3.5. Participation of scientists from developing countries

	Total number of scientists	*No of male scientists*	*No of female scientists*
Number of participating scientists	*250*	*130*	*120*
Number of young scientists/students (<35 years old)	*58*	*32*	*26*
Number of scientists from developing countries	*192*	*110*	*82*

3.6. List of the 5 most important publications (including maps) of this year (publications marked by * could not have been published without IGCP 610):

*Arslanov, Kh., Yanina, T., Chepalyga, A., Svitoch, A., Makshaev, R., Maksimov, F., Tertychniy, N., Starikova, A., 2015. On the age of the Khvalynian deposits of the Caspian Sea coasts according to 14C and 230Th/234U methods. *Quaternary International*. DOI: 10.1016/j.quaint.2015.05.067

*Bezrodnykh, Yu., Deliya, S., Romanyuk, B., Sorokin, V., Yanina, T., 2015. New data on the upper Quaternary stratigraphy of the North Caspian Sea. *Doklady Earth Sciences*. Vol. 462, no. 1, pp. 479–483.

*Esin, N.V., Esin, N.I., Yanko-Hombach, V. 2015. The Black Sea basin filling by the Mediterranean salt water during the Holocene. *Quaternary International*. http://dx.doi.org/10.1016/j.quaint.2015.05.011

Matenco, L., Munteanu, I., ter Borgh, M., Stanica, A., Tilita, M., Lericolais, G., Dinu, C., Oaie, Gh. 2015. The interplay between tectonics, sediment dynamics and gateways evolution in the Danube system from the Pannonian Basin to the western Black Sea. Science of the Total Environment, http://dx.doi.org/10.1016/j.scitotenv.2015.10.081, 0048-9697/© 2015 Elsevier, 21 p.

*Yanko-Hombach, V., Schnyukov, E., Pasynkov, A., Sorokin, V., Kuprin, P., Maslakov, N., Motnenko, I., Smyntyna, O. In Press. Late Pleistocene-Holocene Environmental Factors Defining the Azov-Black Sea Basin, and the Identification of Potential Sample Areas for Seabed Prehistoric Site Prospecting and Landscape Exploration on the Black Sea Continental Shelf. In Flemming, F., Harff, J., Moura, D. (eds.), *Quaternary Palaeoenvironments of the European Continental Shelf: Environments for occupation and conditions for survival or destruction of submerged prehistoric deposits*, Chapter 16. Chichester, UK: Wiley-Blackwell.

Full bibliography of this year (publications marked by * could not have been published without IGCP 610). See Annex 1.

3.7. Activities involving other IGCP projects, UNESCO, IUGS or others*:* EU-ITN programme "Drivers of Pontocaspian biodiversity rise and demise"; EU-WAPCOAST BS-ERA.NET 076 “Water Pollution Prevention Options for Coastal Zones and Tourist Areas: Application to the Danube Delta Front Area”; ICOMOS - The International Council on Monuments and Sites; COCONET “Towards COast to COast NETworks of marine protected areas (from the shore to the high and deep sea), coupled with sea-based wind energy potential,” SPLASHCOS “Submerged Prehistoric Archaeology and Landscapes of the Continental Shelf”; “Study of the formation processes and spatial distribution of methane in the Black Sea and theoretical considerations of their influence on basin eco- and geosystems,” supported by the Ministry of Education and Science of Ukraine; and “Paleogeographical evolution of the Gulf of Taman with special regard to the underwater excavations in Phanagoria” funded by the University of Cologne and Russian Foundation for Basic Research (RFBR); and series of projects supported by RFBR:№ 14-05-00227 "Environmental evolution of the Caspian and Black Sea under the multiscale changes of climate", № 13-05-00086 “Pont-Manych-Caspian oceanographic system in the late Pleistocene: Systematics and correlation of events, evaluation of character and degree of interaction, paleogeographic consequences in the region”, № 13-05-00242 “Radioisotope stratification of age and synchronization of the Quaternary deposits of the Ponto-Caspian”, № 13-05-00625 “Peculiarities of the evolution of relief in the Northern Caspian region in the late Pleistocene: Main stages of the development, chronology, and correlation with climatic rhythms in the Black Sea-Caspian region”, № 14-05-00227 “Regularities of evolution of environment of the Caspian Sea and the Black Sea in the conditions of multi-scale climate changes”.

3.8. Scientific Legacy: We plan to upload a series of presentations and publications related to IGCP 610 at the main project website. The field data (e.g., field diaries, samples, maps, etc.), collections of MFO and cores are stored at the laboratories of Co-Leaders’ institutions and are available for study by IGCP 610 participants.

3.9. What tangible improvements has your project obtained? IGCP 610 activity has encouraged East-West dialogue by integrating eastern and western scientists into an international R&D community through scientific collaboration, workshops, and annual meetings. As a result, eastern scientists have obtained access to western laboratories and advanced scientific methods while western scientists have had access to a vast amount of material stored in the former USSR and Eastern Bloc archives or published in local languages.

3.10. What kinds of activities in respect to the benefit of society and science outreach has your project undertaken? Implementing cultural heritage projects, open-air site museums, training centers for school children with possibility of conducting experimental research; working together with local Governmental and Non-Governmental Organizations across the Caspian-Black Sea-Mediterranean Corridors that we study as a single geographic unit, bypassing linguistic and political boundaries, and thus encouraging East-West dialogue, cooperation, and integration of researchers from different countries into the international R&D community; enhancing our understanding of the links between environmental change and human adaptation; contributing to an improvement in human living conditions (especially for those at risk from coastal flooding), and promoting the wise use of the Earth as a human habitat; and preserving human heritage by addressing and clarifying existing archaeological, ethnological, and paleoanthropological questions concerning the evolution of human subsistence strategies, social and ideological spheres in the light of environmental change, and human physical and cultural adaptation theory.

3.11. What kind of public information (media reports, etc) has your project generated? The project generated much public information that is available on a great number of websites and media showing its significant impact: *http://www.ocean.ru/content/view/2193/89/*, *http://igcp610.onu.edu.ua/*, *http://igcp610.onu.edu.ua/germaniya,http://igras.ru/news/790*, *https://twitter.com/blackseastudies/status/319447691182620672*, *http://www.gia.az/view.php?lang=en&menu=1&id=1699*, *http://www.ims.metu.edu.tr/Sayfa.php?icerik=DuyuruOku&did=1075*, *http://meetingorganizer.copernicus.org/EGU2016/session/20759*, *http://lienss.univ-larochelle.fr/Carozza-Jean-Michel-Pr*, *http://newstes.ru/2015/09/27/pod-astrahanyu-sotrudniki-gibdd-otkopali-avtobus-s-inostrancami.html*, *etc.*

4. Activities planned. ***4.1. General goals:*** 1) Efforts are ongoing: to maximize IGCP 610 exposure via diffusion of results in key international journals and updates of our web pages to ensure wide accessibility and increased interactive potential for project participants, the scientific community at large, relevant agencies, and the public; to consolidate scientific achievements as a basis for developing future strategies; to continue to augment the funding base with upcoming and submitted research proposals through various funding agencies; to publish the next special volume of *Quaternary International* devoted to the achievements of IGCP 610. ***4.2. Tentative list of specific meetings and field trips (please list the participating countries)*:** We have a major problem with organizing the Fourth Plenary Meeting and Field Trip in 2016. According to our working plan, it should be held in Crimea. But due to the geopolitical problems (no need to discuss it here), this will be next to impossible to achieve. An alternative place is required. The most beneficial for the project would be to run the conference and field trip in Turkmenistan because it would enable us to provide in-depth study of the Lower Pleistocene (Old Caspian) geological sequences exposed in the anticline structures of Cheleken, Nebit Dag, Monzhukly, Urundzhik, Khuda-Dag, and Kum-Dag. These deposits contain unique faunistic complexes of Caspian origin that are known only on the SE coast of the Caspian Sea and are highly debated. On-site study of these outcrops by the IGCP 610 multidisciplinary team would bring us closer to a common understanding of the geological history of the Caspian Sea and would contribute to the current state of cooperation between UNESCO and Turkmenistan. However, it is not easy to organize because Turkmenistan is a rather closed country. Assistance of UNESCO at a high administrative level is badly needed to achieve this goal. ***Other meetings*** include: Special Session SSP4.5 “From the Caspian to Mediterranean: Environmental Change and Human Response during the Quaternary (IGCP 610)" and "ERE1.5 Methane in marine ecosystems: Significance for geological exploration, ecology and navigation" to be held in the framework of the European Geosciences Union General Assembly in Vienna, Austria, 17–22 April 2016. Symposium “From the Caspian to Mediterranean: Environmental Change and Human Response during the Quaternary (IGCP 610)” to be held at the 35 International Congress, 27.08-4.09.2016, Cape Town, South Africa.

5. Project funding requested: For the year 2016, we request 10000 USD, if possible. The funds we request are needed to cover travel costs and accommodations for participants from developing countries as well as part coverage of costs for the field trip (transportation, accommodation, preparation of geological and archaeological sites for demonstration and study).

6. Request for extension, on-extended-term-status, or intention to propose successor project: N/A

7. Financial statement ($ USD only): In 2015, we obtained 4500 USD from IGCP. The funds were used exclusively to cover registration fees as well as airfare and accommodation for a number of young researchers and students from developing countries (see Financial Report).

8. What additional funding besides the IGCP seed funding has your project obtained thanks to the IGCP label? Please estimate the budget received for meetings, research or other and identify the source. Additional funding that IGCP 610 project obtained thanks to the IGCP label include: 6000 USD from the Avalon Institute of Applied Sciences, Canada; 10,000 USD from the Russian Foundation for Basic Research (RFBR) to cover participation of Russian scientists from Moscow State University in the Third Plenary Conference in Astrakhan as well as for per-conference field work; 5000 USD from the Russian Academy of Sciences; 2000 USD from Astrakhan Museum-Reserve; 1000 USD from RFBR and 1000 from STRATI-2015 for participation in IGCP 610 session at STRATI-2015 in Vienna; 900 USA from GSA to support young scientists from developing countries, and 3500 USD from sponsors to cover transportation costs and printing of the Field Trip Guide—in total 29,400 USD plus 4500 USD from IGCP. Moreover, all the scientific activities, including the field campaigns on the Danube River, Danube Delta, and Black Sea by the Romanian partner GeoEcoMar have been supported from other sources—National Research Programme, European Programmes (Environmental Fund, Cross-border, Regional, Structural, etc.).

9. Attach any information you may consider relevant. The paper we planned for the IUGS Journal 'EPISODES' in 2015 is postponed to the final year of our project.

Annex 1.

List of selected publications (in per-reviewed journals) related to IGCP 610 published in 2015 (publications marked by * could not have been published without project):

1. Angue Minto'o, C.M., Bassetti, M.A., Morigi, C., Ducassou, E., Toucanne, S., Jouet, G, Mulder, T., 2015. Levantine intermediate water hydrodynamic and bottom water ventilation in the northern Tyrrhenian Sea over the past 56,000 years: New insights from benthic foraminifera and ostracods. *Quaternary International*. 357: 295–313.
2. *Arslanov Kh.A., Yanina, T.A., Chepalyga, A.L., Svitoch, A.A., Makshaev, R.R., Maksimov, F.E., Chernov, S.B., Tertychniy, N.I., Starikova, A.A., 2015. On the age of the Khvalynian deposits of the Caspian Sea coasts according to 14C and 230Th/234U methods. *Quaternary International*. DOI: 10.1016/j.quaint.2015.05.067
3. *Badyukova, E., Solovieva, G., 2015. Coastal eolian landforms and sea level fluctuations. *Oceanology*. 55(1):124–130.
4. *Bezrodnykh, Y.P., Deliya, S., Romanyuk, B., Sorokin, V.M., and Yanina, T.A., 2015. New data on the upper Quaternary stratigraphy of the North Caspian Sea. *Doklady Earth Sciences*. 462(1): 479–483.
5. *Bezrodnykh, Yu., Sorokin, V., Yanina, T., 2015. Ob Atelskoy regressii Kaspiyskogo morya [About Atelian regression in the Caspian Sea]. *Moscow State University Vestnik. Ser.* 5: *Geography* 2: 77–85. (In Russian)
6. *Bolikhovskaya, N., Faustov, S., Markova, A., 2015. Pleistocene climatic stratigraphy and environments of the Terek-Kuma lowland (NW Caspian Sea region) inferred from palynological, paleomagnetic and rodent records of the long Otkaznoye sediment sequence. *Quaternary International*. DOI: 10.1016/j.quaint.2015.09.067
7. Briceag, A., Yanchilina, A., Ryan, W.B.F., Stoica, M., Oaie, G., Melinte-Dobrinescu, M., 2015. Sea-Level Fluctuations Inferred by Microfaunal and Isotope Fluctuations in the Romanian Black Sea Shelf during the last 25,000 years. *Ber. Inst. Erdwiss. K.-F.-Univ. Graz* Band 21, 46, ISSN 1608-8166.
8. Cordova, C.E., 2015. *Crimea and the Black Sea: An Environmental History*. I.B. Tauris, London.
9. Coltorti, M., Pieruccini, P., Montagna, P., Zorzi, F., 2015. Stratigraphy, facies analysis and chronology of Quaternary deposits at Capo S. Marco (Sinis Peninsula, west Sardinia, Italy). *Quaternary International*. 357: 158–175.
10. Crise A. et al. 2015. A MSFD complementary approach for the assessment of pressures, knowledge and data gaps in Southern European Seas: the PERSEUS experience. *Marine Pollution Bulletin*. Ref. No.: MPB-D-14-01055R1
11. *Esin, N.V., Esin, N.I., Yanko-Hombach, V., 2015. The Black Sea basin filling by the Mediterranean salt water during the Holocene. *Quaternary International*. http://dx.doi.org/10.1016/j.quaint.2015.05.011
12. *Kislov, A.V., 2015. The interpretation of secular Caspian Sea level records during the Holocene. *Quaternary International*. DOI: 10.1016/j.quaint.2015.07.026
13. *Leonova, N., Nesmeyanov, S., Vinogradova, E., Voeykova, O., 2015. Upper Paleolithic subsistence practices in the southern Russian Plain: paleolandscapes and settlement system of Kamennaya Balka sites. *Quaternary International*. 355: 175–187.
14. *Makshaev, R., Svitoch, A., 2015. Chocolate clays of the Northern Caspian Sea region: Distribution, structure, and origin. *Quaternary International*. DOI: 10.1016/j.quaint.2015.07.018
15. Matenco L., Munteanu I., ter Borgh M., Stanica A., Tilita M., Lericolais G., Dinu C., Oaie Gh., In press. The interplay between tectonics, sediment dynamics and gateways evolution in the Danube system from the Pannonian Basin to the western Black Sea.

Science of the Total Environment, S0048-9697(15)30897-4. doi: 10.1016/j.scitotenv.2015.10.081.

16. Oaie, Gh., Secrieru, D., Bondar, C., Szobotka, St., Dutu, L., Stanescu, I., Dutu, F., Opreanu, G., Pojar, I., Manta, T. 2015. Lower Danube river: characterization of sediments and pollutants. *GeoEcoMarina*. 21: 191–206.
17. Panin, N., Duţu, L.T., Duţu, F., 2015. The Danube Delta – an Overview of the Holocene Evolution, *Mediterranee*, in press.
18. Panin, N., Oaie, Gh., 2015. Crearea unei infrastructure de cercetare in regiunea Dunare – Marea Neagra: Sistem de securitate pentru Marea Neagra de Vest pentru alertare in timp real la geohazarde marine de risc. In: Hera C. (ed.), *Schimbari climatice globale – Grija pentru resurse naturale*. Editura Academiei Române. pp. 239–248
19. Popescu, I., Panin, N., Jipa, D., Lericolais, G., Ion, G., 2015. *Canyons of the Black Sea Basin. Focus on the Danube Submarine Canyon*. CIESM Series, in press.
20. Popova, L.V., 2015. Small mammal fauna as an evidence of environmental dynamics in the Holocene of Ukrainian area. *Quaternary International*. 357: 82–92.
21. Rădan, S., Panin, N, Rădan, S.C., 2015. SEQS 2013: Correlations of Quaternary fluvial, eolian, deltaic and marine sequences – Meeting and field trip in Romania. *Quaternary International*. 357: 1–3.
22. *Smyntyna, O., 2015. Late Mesolithic site of Zaliznychne in the light of recent hypothesis of Neolithization of North-Western Pontic region. *Romanian Review of Eurasian Studies*. XI(1–2): 7–22.
23. *Smyntyna, O., 2015. Pastoralism and Pastoralists Since the Bronze Age till the Present: an Environmental Interpretation of Historical Phenomenon: a review of "The Ecology of Pastoralism," Nick P. Kardoulias, ed. University of Colorado Press. Anthropology Book Forum of American Anthropological Association. http://www.anthropology-news.org/?book-review=pastoralism-and-pastoralists-since-the-bonze-age-till-the-present-an-environmental-interpretation-of-historical-phenomenon
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29. Yanko, V.V., Kondaryuk, T.O., Likhodedova, O.G., Motnenko, I., 2014. Otsenka vliyaniya rechnogo stoka na morskie donnye ecosistemy po bentosnym foraminiferam i litologii donnykh otlozheniy [Evaluating the influence of river discharge on marine bottom ecosystems using benthic foraminifera and lithology from bottom sediments]. *Geology and Mineral Resources of the World Ocean*. 4: 91–117. (In Russian)

List of selected conference materials/abstracts presented at IGCP 610 meetings:

1. Brittingham, A., Hartman, G., Adler, D., Gasparyan, B., 2015. Late Pleistocene Paleoclimate Reconstruction at Lusakert Cave, Armenia. Geological Society of America Abstracts with Programs. Vol. 47, No. 7, p.205 – obtained "Richard Hay Student Paper Award" for the best student presentation in archaeological geology
2. Esin, N.V., Esin, N.I., Yanko-Hombach, V.V. 2015. Mechanics of formation of Caspian–Mediterranean passage and natural evolution of Paratethys Sea. *Geology of Seas and Oceans: Proceedings of XXI International Conference on Marine Geology*. Moscow: GEOS, 2015. Vol. I., pp. 135–139.
3. Farajova, M., 2015. Reconstruction of Archaeological Landscape of Gobustan and the relationship with the Caspian Sea level changes at the end of Late Pleistocene and Early Holocene. STRATI 2015, Abstracts, Berichte des Institutes für Erdwissenschaften Karl-Franzens-Universität Graz, p. 104.
4. Ferguson, S.. 2015. Pleistocene-Hholocene (MIS 5-1) climatic changes in SW Black Sea: Palynology of DSDP Site 380. Geological Society of America Abstracts with Programs. Vol. 47, No. 7, p.205.
5. Gerasimenko, N., 2015. Short period palaeoclimatic changes recorded by pollen and lithopedology in the Kaydaky-Pryluky units (terrestrial equivalents of MIS 5) in Southern Ukraine. Geological Society of America Abstracts with Programs. Vol. 47, No. 7, p.204 .
6. Kondaryuk, T., Yanko-Hombach, V., Kovalishina, S. 2015. Foraminifera as indicators of environmental stress in marine ecosystems: new evidence from the Romanian and Ukrainian shelf (Black Sea). Geological Society of America Abstracts with Programs. Vol. 47, No. 7, p. 206.
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8. Kurbanov, R.N., 2015. Marine and continental Quaternary deposits of the southeastern coast of the Caspian Sea. STRATI 2015, Abstracts, Berichte des Institutes für Erdwissenschaften Karl-Franzens-Universität Graz, p. 215.
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10. Marret, F., Bradley, L., Shumilovskikh, L., Ivanova, E., Murdmaa, I., 2015. Environmental changes in the SE and NE Black Sea during the late Quaternary: Palynological evidence. Geological Society of America Abstracts with Programs. Vol. 47, No. 7, p. 205.
11. Mudie, P., 2015. Advances in palynology of the Black Sea Corridor: a decade of IGCP collaboration. Geological Society of America Abstracts with Programs. Vol. 47, No. 7, p. 204.

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13. Smyntyna, O., 2015. Interpretation of human response to the global climate change in North-Western Black Sea region on the Pleistocene-Holocene boundary: from linear approach towards theoretical diversity. Geological Society of America Abstracts with Programs. Vol. 47, No. 7, p. 206.
14. Tesakov, A., Shik, S., Velichko, A., Gladenkov, Y., Lavrushin, Y., Yanina, T., 2015. New proposals for the Russian and International stratigraphic scale of the Quaternary. STRATI 2015, Abstracts, Berichte des Institutes für Erdwissenschaften Karl-Franzens-Universität Graz, p. 369.
15. Velichko, A.A., Svitoch, A.A., Yanina, T.A., Kurbanov, R.N., Konstantinov, E.A., 2015. Correlation of Quaternary deposits of the East European plain and Caspian Sea. STRATI 2015, Abstracts, Berichte des Institutes für Erdwissenschaften Karl-Franzens-Universität Graz, p. 383.
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17. Yanko-Hombach, V. 2105. The Quaternary history of the Ponto-Caspian basins. Geological Society of America Abstracts with Programs. Vol. 47, No. 7, p. 204.
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