

Publications on Space Impact on the Environment

Публикации по Космически въздействия върху околната среда

1. Space Impact on the Environment

1. Космически въздействия върху околната среда

a. Solar terrestrial relations

(Solar Activity, Solar Irradiance and its impact on Global Climate Changes, solar forcing of the climate)

а. Слънчево- земни връзки

(слънчева активност, слънчева светимост и влиянието им върху Глобалните промени на климата, слънчево форсиране на климата)

.Varonov A., Shopov Y.Y. (2014) On the Influence of Total Solar Irradiance on Global Land Temperature. *Comptes rendus de l'Academie bulgare des Sciences*. Tome 67, No 9, 2014, pp 1263-1268

.Shopov Y. (2013) Solar Impact on Global Climate Changes. 4rd School and workshop on space plasma physics, August 19–26, 2012, Albena Resort (Bulgaria), *AIP Conf. Proc.*, v. 1551, pp. 179- 188; doi: 10.1063/1.4818867

.Shopov Y. (2013) Ultra- High Resolution Speleothem Records – How Far We Can Push The Time Resolution? Proc. of 16th International Congress of Sp., Czech Republic, Brno, July 21 –28, 2013, ed, by Michal Filippi, Pavel Bosak, pp. 450-452

.Shopov Y., D. Stoykova, L. Tsankov, U. Sauro, A. Borsato, F. Cucchi, P. Forti, L. Piccini, D. C. Ford, C. J. Yonge. (2013) Variations of Annual Karst Denudation Rates in the Last Two Millennia obtained from Speleothem Records. Proc. of 16th International Congress of Sp., Czech Republic, Brno, July 21 –28, 2013, ed, by Michal Filippi, Pavel Bosak, pp. 453-457.

.Shopov Y. (2013) Ultra- High Resolution Speleothem Records. Proceedings of National Conference with Int. participation of Bulgarian Geological Society “Geosciences 2013, pp. 49-50

.Stoykova D. A., Y. Y. Shopov, L. T. Tsankov, C. J. Yonge (2008) Origin of the Climatic Cycles from Orbital to Sub-Annual. *Journal of Atmospheric and Solar-Terrestrial Physics*, v. 70, pp. 293–302, doi:10.1016/j.jastp.2007.08.018

.Pagliara, A., Forti, P. & Y. Y. Shopov (2008) Studio delle fluttuazioni climatiche quaternarie dell'Iglesiente mediante l'analisi di speleotemi della Grotta di Santa Barbara Iglesias, CA.- *Memorie dell'Istituto Italiano di Speleologia*, 21, 167-177.

.Shopov Y. (2007) Variations of the solar cycles and their impact on radio propagation.- Proceedings of the First International Symposium on Radio Systems and Space Plasma, Sofia, Bulgaria September 2 – 5, 2007 ISRSSP'07, pp.197-200

. Shopov Y. Y. (2004) 20 Years of Speleothem Paleoluminescence Records of Environmental Changes: an Overview. *International J. of Sp.*, v. 33 (1/4) pp. 5-17.

b.- *Geophysical Research Abstracts*, Vol. 8, (2006) 07640

. Shopov Y. (2002) Influence of the Solar Luminosity on the Glaciations, Earthquakes and Sea Level Changes. - 4th International Symposium on “The Sustainable Development: Academic and Policy Implications”, Samcheok, Korea, pp. 65-73 (in English), 195- 203 (in Korean)

. **Shopov Y., L.** Tsankov, A. Damyanova, Y. Damyanov, L. Georgiev, E. Marinova, C. Yonge, D. Ford (2001) Quantitative Annual Speleothem Records of Temperature, Precipitation and **Solar Insolation** in the past – A Key for Characterization of past climatic systems. - Proceedings of the XIII-th UIS Congress, Brazil (2001) s.1, 188- 191

b. – Extended abstracts of the International Workshop “Cave climate and Paleoclimate- Best Record of the Global Change, Stara Zagora, Bulgaria, 24-27 September, 2002, pp. 40-43.

.**Shopov Y. Y.,** D. C. Ford, C. Yonge, W. MacDonald, L. Georgiev, M. Sanambria, V. Dermendjiev, Al. Benderev, G. Buyukliev, S. Georgiev, M. Delchev, M. Sirakova (1998) High Resolution Records of Climatic Variations and **Solar Forcing** from the Luminescence of Speleothems- in: "Global Karst Correlation"- Chapter 15, ed. by Y. Daoxian & L. Zaihua, Science Press, New York and VSP BV-Utrecht, The Netherlands & Tokyo pp.269-289. **ISBN 7-03-006837-8; ISBN 1-880132-32-X; ISBN 90-6764-286-X**

.Dermendjiev V., **Shopov Y. Y.,** Buyukliev G. N., I. Panayotova One New Indirect **Solar Activity** Index - Geomagnetism and Aeronomy, v.31, No.5, p.739-740.

.**Shopov Y. Y.,** Dermendjiev V. N., Buyukliev G. **Solar Activity** in the Last 35000 years. - Annales Geophysicae, s. i., 300 **ISSN 0992- 7689**

.**Shopov Y. Y.,** Dermendjiev V. Microzonality of Luminescence of Cave Flowstones as a New Indirect Index of **Solar Activity**. - Compt. Rend. L'Acad.B. Sci., v.43, 7,pp.9-12. **ISSN 0861-1459**

Shopov Y. Y., Ford D. C., Schwarcz H. P. Luminescent Microbanding in speleothems: High resolution chronology and paleoclimate. - Geology, v.22, p.407 -410.

.**Shopov Y. Y.,** A. Damyanova, Y. Damyanov, L. Tsankov Speleothems Luminescence Proxy Records of **Geomagnetic Field Intensity**. - In book "Climatic Change- the Karst Record", Ed. by S.E. Lauritzen. KWI, Bergen, p. 153. **ISSB 0-9640258-1-7**

c. - In: Proceeding of the III-rd National Conference of the Solar- Terrestrial Influences, Sofia, pp. 109- 110.

.**Shopov Y. Y.,** Dermendjiev V. N., Buyukliev G. Methods for Research of the **Solar Activity** in the Past and Flowstone Luminescent Records of the Solar Activity. - Studia Carsologica, v.2 pp.139- 149.

.**Shopov Y. Y,** Dermendjiev V, Buyukliev G. A New Method for Dating of Natural Materials with Periodical Macrostructure by Autocalibration and it's Application for Study of the **Solar Activity** in the Past. - Quaderni del Dipt. di Geo., n.13 Universita di Padova, pp.23- 30 **ISSN 1120- 9682**

.**Shopov Y. Y.,** V. Dermendjiev, G. Buyukliev Astrophysical Effects and **Solar- Terrestrial Relationships** Recorded by the Conventional Indirect Indexes and the new LLMZA index of the **Solar Activity** in the Past- in book: "ICSU Round Table on Space and Solar influences on the Environment" (ed. by S. Radicella and K. Serafimov), p.55- 72.

.**Shopov Y. Y.,** Ford D. C., Morrison J., Schwarcz H. P., Georgiev L. N., Sanambria M. E., Dermendjiev V., Buyukliev G. High resolution records of Quaternary **Solar Activity**, Climate and Variations- GSA Abs., v.24 (7), 268. **ISSN 0016-7592**

.**Shopov Y. Y.,** Dermendjiev V., Buyukliev G. Investigations on the Old Variations of the Climate and **Solar Activity** by A New Method- LLMZA of Cave Flowstone.- Proc. of 10th Internat. UIS Congress,

Budapest, v.1, pp.95-97. ISBN 963 8012 30 7, ISBN 963 8012 31 5

.**Shopov Y. Y.**, Dermendjiev V. N., Buyukliev G. I., Georgiev L. N., Stoychev T. S. Investigations on the Variations of the **Solar Activity** during the Holocene by means of LLMZA of Cave Flowstone. - Exp. Ann. Univ. of Sofia, A- Speleology, v.5, pp.17- 27. ISSN 0861- 3192

.**Shopov Y. Y.** Laser Luminescent MicroZonal Analysis- A New Method for Investigation of the Alterations of the Climate and **Solar Activity** during Quaternary- in "Problems of K. Study of Mount. Countries", Ed. By T. Kiknadze, MEISNIEREBA, Tbilisi, pp.228-232,

b. Orbital Variations of the Earth's Orbit and their influence over Glacial Periods

б. Орбитални вариации на земната орбита и тяхното въздействие върху глобалните промени на климата.

.**Shopov Y.** (2013) Solar Impact on Global Climate Changes. 4rd School and workshop on space plasma physics, August 19–26, 2012, Albena Resort (Bulgaria), *AIP Conf. Proc.*, v. 1551, pp. 179- 188; doi: 10.1063/1.4818867

.**Stoykova D. A., Y. Y. Shopov**, L. T. Tsankov, C. J. Yonge (2008) Origin of the Climatic Cycles from Orbital to Sub-Annual. *Journal of Atmospheric and Solar-Terrestrial Physics*, v. 70, pp. 293–302, doi:10.1016/j.jastp.2007.08.018

.**Shopov Y., D. Stoykova**, L. Tsankov, M. Sanabria, D. Georgieva, D. Ford, L. Georgiev (2004) Influence of **Solar Luminosity** over **Geomagnetic** and Climatic Cycles.- *International J. of Sp.*, v. 33 (1/4) pp. 19- 24. ISSN 0392-6672

.**Stoykova D., Shopov Y. Y.** (2003) Paleoclimate. - In book: Encyclopedia “World of Earth Science”, v.2, Ed. By Lerner K. L, Lerner B. W., Thomson Publishing’s Gale Group, Montrose (USA), pp. 423-424. 736 pages Vol. 1, ISBN: 078767740X, ISBN: 0787677418

-*Gale Encyclopedia of Science*, 3rd edition (December 2003), 6 volumes, Lerner, K. L., and B. W. Lerner (editors), Published by Thomson/Gale, 2003. ISBN: 0787675555
<http://www.Keepmedia.com/pubs/GaleEncyclopediaOfScience/2005/10/25/1136334>

.**Shopov Y. Y., D. A. Stoykova**, G. Tenchov, L. Tsankov, M. Sanambria, L. N. Georgiev, D. C. Ford (2002). Correlation Between the Luminescent Speleothem Records of **Solar Insolation** and the Paleotemperature Records. - In book: “Karst Processes and the Carbon Cycle” ed. by Y. Daoxian & Z. Cheng, Geological Publishing House, Beijing, China, IGCP379, pp. 136-144. ISBN 7-116-03655-5

.**Shopov Y., D. Stoykova**, L. Tsankov, M. Sanabria, D. Georgieva, D. Ford, J. Lundberg, L. Georgiev, P. Forti (2001) Intensity of Prolonged **Solar Luminosity** Cycles and Their Influence Over Past Climates and Geomagnetic Field- Proceedings of the XIII-th UIS Congress, Brazil, 216- 218

b. –VIII Nat. Conf. with International Participation on Modern Problems of Solar- Terrestrial Interactions, 6– 7 Dec. 2001, Sofia, pp.99-102.

.**Shopov Y. Y., D. Stoykova**, L. Tsankov, M. Sanabria, J. Lunberg, L. Georgiev, P. Forti, D. Georgieva (2000) Verification of the Causes of Glaciations and Sea Level Changes- *International J. of Sp.*, pp. 71-75. ISSN 0392-6672

.**Shopov Y. Y., D. A. Stoykova**, D. Ford, L. N. Georgiev, L. Tsankov, D. Georgieva (1999) Influence of the **Earth's Orbit** and Solar Luminosity on the Sea Level Changes. - *Publ. Astronomy Observatory Belgrade*, v.64, pp.95-102 ISSN 0373-3742.

.**Stoykova D., Y. Y. Shopov**, M. Sanambria, L. Tsankov, D. Georgieva, (1999) - Significance of Luminescent Records for Determination of **Orbital Variations** and Timing of Termination - II: -in book: Contribucion del Estudio Cientifico De Las Cavidades Karsticas Al Conocimiento Geologico, ed. by B. Andreo, F. Carrasco, J. J Duran, PCN, Instituto de Investigacion, Malaga, Spain, pp.135-142. **ISBN 84-920268-6-3**

с. Cosmic Rays Impact on the Global Climate Changes
в. Въздействия на Космичните лъчи върху климата

.**Shopov Y.** (2013) Solar Impact on Global Climate Changes. 4rd School and workshop on space plasma physics, August 19–26, 2012, Albena Resort (Bulgaria), *AIP Conf. Proc.*, v. 1551, pp. 179- 188; doi: 10.1063/1.4818867

.**Shopov Y.** (2013) Ultra- High Resolution Speleothem Records – How Far We Can Push The Time Resolution? Proc. of 16th International Congress of Sp., Czech Republic, Brno, July 21 –28, 2013, ed. by Michal Filippi, Pavel Bosak, pp. 450-452

.**Shopov Y.** (2013) Ultra- High Resolution Speleothem Records. Proceedings of National Conference with Int. participation of Bulgarian Geological Society “Geosciences 2013, pp. 49-50

.**Stoykova D. A., Y. Y. Shopov**, L. T. Tsankov, C. J. Yonge (2008) Origin of the Climatic Cycles from Orbital to Sub-Annual. *Journal of Atmospheric and Solar-Terrestrial Physics*, v. 70, pp. 293–302, doi:10.1016/j.jastp.2007.08.018

d. Solar Modulation of the Geomagnetic Activity and the related Processes

г. Слънчева модулация на геомагнитната активност и зависещите от нея процеси.

.**Shopov Y., D. Stoykova**, L. Tsankov, M. Sanabria, D. Georgieva, D. Ford, L. Georgiev (2004) Influence of Solar Luminosity over **Geomagnetic** and Climatic Cycles as Derived from Speleothems-*International J. of Sp.*, v. 33 (1/4) pp. 19- 24. **ISSN 0392-6672**

.**Shopov Y. Y., D. A. Stoykova**, G. Tenchov, L. Tsankov, M. Sanambria, L. N. Georgiev, D. C. Ford (2002). Correlation Between the Luminescent Speleothem Records of Solar Insolation and the Paleotemperature Records. - In book: “Karst Processes and the Carbon Cycle” ed. by Y. Daoxian & Z. Cheng, Geological Publishing House, Beijing, China, IGCP379, pp. 136-144. **ISBN 7-116-03655-5**

.**Shopov Y., D. Stoykova**, L. Tsankov, M. Sanabria, D. Georgieva, D. Ford, J. Lundberg, L. Georgiev, P. Forti (2001) Intensity of Prolonged **Solar Luminosity** Cycles and Their Influence Over Past Climates and Geomagnetic Field- Proceedings of the XIII-th UIS Congress, Brazil, 216- 218

b. –VIII Nat. Conf. with International Participation on Modern Problems of Solar- Terrestrial Interactions, 6– 7 Dec. 2001, Sofia, pp.99-102.

.**Shopov Y. Y., A. Damyanova**, Y. Damyanov, L. Tsankov Speleothems Luminescence Proxy Records of **Geomagnetic Field Intensity**. - In book "Climatic Change- the Karst Record", Ed. by S.E. Lauritzen. KWI, Bergen, p. 153. **ISSB 0-9640258-1-7**

c. - In: Proceeding of the III-rd National Conference of the Solar- Terrestrial Influences, Sofia, pp. 109-110.