
Virtual reality in science and technology

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The article deals with virtual reality and its application in science and technology. It explains the origin of the term “virtual reality” and its meaning. The authors describe three kinds of virtual reality: the one using a helmet (with TV-screens and earphones) and gloves, another one with video cameras, and the last one with reproduction of a 3D image on a big curved screen. They give an insight into application of these technologies in design and testing of aircraft and cars, in medicine and pharmaceuticals, in physicians and the military educating, in space industry. In conclusion the authors analyse some drawbacks of today’s virtual reality (such as impossibility to transmit smell and taste) and further prospects of its development.

Keywords: virtual reality, model, 3D image, helmet, joystick.

REFERENCES

- [1] Castells M. *The Internet Galaxy: Reflections on the Internet, Business, and Society* [in Russian: Kastel's M. Galaktika Internet. Ekaterinburg, U-Faktorial Publ., 2004, 328 p.].
 - [2] McLuhan H. M. *The Gutenberg Galaxy* [in Russian: Maklyuen M. Galaktika Guttenberga. Kiev, Nika-Tsentr Publ., 2003, 432 p.].
 - [3] Korotkov N.A. Vozmozhnoe reshenie problemy informatsii na osnove klassifikatsii svoistv obyektov fizicheskoi realnosti po kriteriyu N. Vinera [A Possible Solution of the Problem of Information by Classifying Properties of Physical Reality Object According to N. Viner Criterion]. *Materialy V Rossiyskogo Filosofskogo Kongressa. Nauka. Filosofiya. Obschestvo* [Materials of the V Russian Philosophical Congress. Science. Philosophy. Society]. Volume I. Novosibirsk, 2009, pp. 336–337.
 - [4] Babenko V.S. Virtualnaya Realnost: Problemy Interpretatsii [Virtual Reality: Issues of Interpretation]. In: *Virtualnaya Realnost kak Fenomen Nauki, Tekhniki i Kultury*. [Virtual reality as phenomenon of science, technics, and culture]. Saint Petersburg, 1996, pp. 21–28.
 - [5] Tsvetkov K.V. Problema sootnosheniya virtualnogo i realnogo Ya v eticheskoi perspective [The Problem of Correlation between Virtual and Real I in Ethical Perspective]. In: *Iskusstvennyy Intellekt. Filosofiya, Metodologiya, Innovatsii* [Artificial intelligence. Philosophy, Methodology, Innovations]. Saint Petersburg, 2007, pp. 109–113.
 - [6] Klikushina N.Yu. Virtualnaya realnost kak obyekt filosofskogo issledovaniya [Virtual Reality as an Object of Philosophical Study]. *Materialy V Rossiyskogo Filosofskogo Kongressa. Nauka. Filosofiya. Obschestvo* [Materials of the V Russian Philosophical Congress. Science. Philosophy. Society]. Volume I. Novosibirsk, 2009, pp. 109–113; 335–336.
 - [7] Voyskunskiy A.E. Internet — novaya oblast issledovaniy v psikhologicheskoy nauke [Internet as a new Area of Research in Psychological Science]. *Uchyonye Zapiski Kafedry Obschei Psikhologii MGU* [Scientific Notes of the Department of General Psychology of the Moscow State University]. Moscow, 2002, pp. 82–101.
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- [8] Taratuta E.E. *Filosofiya Virtualnoi Realnosti* [The philosophy of virtual reality]. Saint Petersburg, 2007, 320 p.
- [9] Alekseeva I.Yu. Internet i problema subyekta [The Subject versus the Internet]. *Vliyanie Interneta na soznanie i strukturu soznaniya* [Impact of the Internet on Conscience and Conscience Structure]. Moscow, 2004, pp. 24–57.
- [10] Nosov N.A. *Voprosy Filosofii — Philosophical Issues*, 1999, no. 10, pp. 152–164.
- [11] *Kontsepciya virtualnykh mirov i nauchnoe poznanie* [The Concept of Virtual Worlds and Scientific Knowledge]. Saint-Petersburg, RKhGI, 2000, 320 p.
- [12] Ivanov D.V. Obschestvo kak virtualnaya realnost [Society of Virtual Reality]. *Informatsionnoe Obschestvo* [The Information Society]. Moscow, AST Publ., 2004, pp. 355–427.
- [13] Tretyakova T.P. *Vektor Nauki Tolyattinskogo Gosudarstvennogo Universiteta — Vector of Science of Togliatti State University*, 2010, no. 2, pp. 205–208.
- [14] Virtualnaya Real'nost [Virtual Reality]. *Kompleksnye issledovaniya po filosofii* [Comprehensive Studies in Philosophy]. Cheboksary, 2003, issue 3, 51 p.
- [15] Rozin V.M. Internet — novaya informacionnaya texnologiya, semioz, virtualnaya sreda [The New Internet Information Technology, Semiosis, Virtual Environment]. *Vliyanie Interneta na soznanie i strukturu soznaniya* [Impact of the Internet on Conscience and Conscience Structure]. Moscow, 2004, pp. 3–24.

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