проблемами, связанными с решением квалиметрических задач, а также задач внедрения методологии дизайна процессов шести сигм (DFSS). ■

*Статья поступила в редакцию 10.05.2024*

## Список литературы

1. Хованов Н.В. Математические основы теории шкал измерения качества. — Л.: Изд-во ЛГУ, 1982.
2. Тушавин В.А. // Вопросы радиоэлектроники. — 2015. — № 1.
3. Yang K., El-Haik B. S. Design for Six Sigma. 2nd ed. — The McGraw-Hill, 2009.
4. Тушавин В.А. // Системы управления и информационные технологии. — 2014. — № 4(58).
5. Тушавин В.А. Управление качеством ИТ-процессов производственного предприятия: монография. — М.: Научные технологии, 2015.
6. Rubin P. A. // Communications in Statistics — Simulation and Computation. — 1984. — Т. 13. — № 3.
7. Гун Г.С., Рубин Г.Ш. и др. // Вестник Магнитогорского государственного технического университета им. Г.И. Носова. — 2003. — № 5.
8. Антохина Ю.А., Тушавин В.А., Фролова Е.А. // Инновационное приборостроение. — 2022. — Т. 1. — № 2.
9. Верховская А.И., Назаревич С.А. // Инновационное приборостроение. — 2024. — Т. 3. — № 2.
10. Назаревич С.А. // Инновационное приборостроение. — 2023. — Т. 2. — № 4.



# On the Issue of Risk Analysis in Assessing a Complex Quality Indicator

**V.A. Tushavin**[1], FSAEI HE St. Petersburg State University of Aerospace Instrumentation (FSAEI HE SUAI), Dr. (Tech.), tushavin@gmail.com
**Ya.V. Tushavin**[2], FSAEI HE SUAI, yan@tushavin.ru
**A.S. Tur**[3], FSAEI HE SUAI, Liona1996@yandex.ru

[1] Professor, St. Petersburg, Russia
[2] Graduate Student, St. Petersburg, Russia
[3] Senior Lecturer, St. Petersburg, Russia

**Citation:** Tushavin V.A., Tushavin Ya.V., Tur A.S. On the Issue of Risk Analysis in Assessing a Complex Quality Indicator, *Kompetentnost' / Competency (Russia)*, 2024, no. 6, pp. 51–55. DOI: 10.24412/1993-8780-2024-6-51-55

**key words**

quality indicators, dominant indicators, compensated indicators, robustness

The article discusses the algorithm for generating a matrix of random weights, robust scaling techniques, and a methodological approach to risk assessment of a complex quality indicator using sensitivity analysis. These complex studies and analyses conducted by the authors using simulation modeling and modern statistical tools contain certain innovations and allow them to further solve even such problems as assessing the possibility of using inauthentic products in import substitution and in general a wide range of tasks related to comparisons and evaluations of multiparametric objects in economics and management. The results of the work can be useful to researchers dealing with problems related to solving qualimetric tasks, as well as the task of implementing the methodology of Six Sigma process design.

## References

1. Khovanov N.V. Mathematical foundations of the theory of quality measurement scales, Leningrad, *Izd-vo LGU*, 1982, 188 P.
2. Tushavin V.A., *Voprosy radioelektroniki*, 2015, no. 1, pp. 53–60.
3. Yang K., El-Haik B. S. Design for Six Sigma. 2nd ed., *The McGraw-Hill*, 2009, 741 P.
4. Tushavin V.A., *Sistemy upravleniya i informatsionnye tekhnologii*, 2014, no. 4(58), pp. 92–95.
5. Tushavin V.A. Quality management of IT processes of a manufacturing enterprise: monograph, Moscow, *Nauchnye tekhnologii*, 2015, 249 P.
6. Rubin P. A., *Communications in Statistics — Simulation and Computation*, 1984, vol. 13, no. 3, pp. 375–396.
7. Gun G.S., Rubin G.Sh. i dr., *Vestnik Magnitogorskogo gosudarstvennogo tekhnicheskogo universiteta im. G.I. Nosova*, 2003, no. 5, 67 P.
8. Antokhina Yu.A., Tushavin V.A., Frolova E.A., *Innovatsionnoe priborostroenie*, 2022, vol. 1, no. 2, pp. 116–123.
9. Verkhovskaya A.I., Nazarevich S.A., *Innovatsionnoe priborostroenie*, 2024, vol. 3, no. 2. pp. 26–31.
10. Nazarevich S.A., *Innovatsionnoe priborostroenie*, 2023, vol. 2, no. 4, pp. 16–22.