# RELIABILITY EVALUATION OF OPEN-SOURCE SOFTWARE BASED ON FAULT REMOVAL EFFICIENCY

**Maria Vasileva, Georgi Penchev**

***Abstract.*** *Ensuring the reliability of open-source software (OSS) presents a significant challenge due to its inherently collaborative and decentralized development process.This paper investigates Software Reliability Growth Models (SRGMs) that explicitly incorporate the fault removal efficiency parameter to evaluate and predict software reliability. The applicability of these models is demonstrated using real open-source projects. The study highlights the potential of SRGM-based modeling as an effective quantitative approach for evaluating and improving the reliability of open-source software systems.*

**Key words:** Software Reliability Growth Model, Fault Removal Efficiency, Non-Homogeneous Poisson Process (NHPP), Open-Source Projects, Software Reliability Engineering.

**Mathematics Subject Classification: 68N30; 90B25; 41A46**

## Acknowledgments

The work was supported by project No. FP25-FMI-010, "Innovative interdisciplinary research in Informatics, Mathematics, and Pedagogy of Education", of the Scientific Fund of the Paisii Hilendarski University of Plovdiv, Bulgaria.

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