**Performance and cost-effectiveness of change burst metrics in predicting software faults**

The purpose of this study is to determine a type of software metric at file level exhibiting the best prediction performance. Studies have shown that software process metrics are better predictors of software faults than software product metrics. However, there is need for a specific software process metric which can guarantee the best fault prediction performances consistently across different experimental contexts. We collected software metrics data from Open Source Software projects. We used logistic regression and linear regression algorithms to predict bug status and number of bugs corresponding to a file, respectively. The prediction performance of these models was evaluated against numerical and graphical prediction model performance measures. We found that change burst metrics exhibit the best numerical performance measures and have the highest fault detection probability and least cost of misclassification of software components.

## Keywords