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A Performance Comparison on the Probability Plot Correlation Coefficient Test using Several Plotting Positions for GEV Distribution.

Hyunjun Ahn (1), Younghun Jung (2), Ju-Seong Om (3), and Jun-Haeng Heo (4)

(1) Ph.D. assistant, School of Civil and Environmental Engineering, Yonsei University, Seoul, Korea, Republic Of (kamjakang@yonsei.ac.kr, +82-2-393-1597), (2) Ph.D. candidate, School of Civil and Environmental Engineering, Yonsei University, Seoul, Korea, Republic Of (yhjung2000@yonsei.ac.kr, +82-2-393-1597), (3) Ph.D. assistant, School of Civil and Environmental Engineering, Yonsei University, Seoul, Korea, Republic Of (jsom1104@yonsei.ac.kr, +82-2-393-1597), (4) Professor, School of Civil and Environmental Engineering, Yonsei University, Seoul, Korea, Republic Of (jhheo@yonsei.ac.kr, +82-2-2123-2805)

It is very important to select the probability distribution in Statistical hydrology. Goodness of fit test is a statistical method that selects an appropriate probability model for a given data. The probability plot correlation coefficient (PPCC) test as one of the goodness of fit tests was originally developed for normal distribution. Since then, this test has been widely applied to other probability models. The PPCC test is known as one of the best goodness of fit test because it shows higher rejection powers among them. In this study, we focus on the PPCC tests for the GEV distribution which is widely used in the world. For the GEV model, several plotting position formulas are suggested. However, the PPCC statistics are derived only for the plotting position formulas (Goel and De, In-na and Nguyen, and Kim et al.) in which the skewness coefficient (or shape parameter) are included. And then the regression equations are derived as a function of the shape parameter and sample size for a given significance level. In addition, the rejection powers of these formulas are compared using Monte-Carlo simulation.

Keywords: Goodness-of-fit test, Probability plot correlation coefficient test, Plotting position, Monte-Carlo Simulation

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