AN ASYMPTOTIC CORRECTION FOR THE EGGER TEST IN META-ANALYSIS

<u>C. Lozada-Can</u>^{\dagger}, J.B. Copas

University of Warwick, Coventry, UK

[†]E-mail: c.e.lozada-can@warwick.ac.uk

The Egger test is widely used in practice to test for publication bias in Meta-Analysis. It fits a linear regression to the radial plot. The radial plot is a bivariate scatter of the standard normal deviate against precision. The Egger test uses the regression intercept to measure asymmetry: if it differs significantly from zero, then publication bias is assumed. It has been recognized that the Egger test performs poorly, particularly when used in a meta-analysis of binary outcomes. The significance levels of the Egger test are inflated because the test ignores the correlation between the standard normal deviate and its precision. The Egger test rejects far too often the null hypothesis of no publication bias and even more so as the treatment effect gets larger. In this presentation, therefore, we introduce an asymptotic bias correction to the Egger test that accounts for the omitted correlation. The bias correction adjusts the Egger test leading to approximately correct significance levels. We also discuss some theory behind the Egger test and this bias correction and present some simulation results.