

# A New Procedure for Detection of Crossing DIF

Hsin-Hung Li  
William Stout

## Abstract

The purpose of this paper is to present a hypothesis testing and estimation procedure, Crossing SIBTEST, for detecting crossing DIF. Crossing DIF exists when the difference in the probabilities of a correct answer for the two examinee groups changes signs as ability level is varied. In item response theory terms, crossing DIF is indicated by two crossing item characteristic curves. Our new procedure, denoted as Crossing SIBTEST, first estimates the matching subtest score at which crossing occurs using least squares regression analysis. A Crossing SIBTEST statistic then is used to test the hypothesis of crossing DIF. The performance of Crossing SIBTEST is evaluated in this study.