

A variable-threshold odds ratio weighted sum test

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The odds ratio weighted-sum statistic (ORWSS) was recently proposed as a more powerful alternative to the weighted-sum (WS) test in certain genetic architectures. In this poster, we demonstrate that the weighting strategy of ORWSS is particularly sensitive to situations involving relatively small numbers of causal variants relative to the number of non-causal variants at the locus of interest. However, under other genetic architectures, we demonstrate that ORWSS can experience substantial power loss. We demonstrate a variable threshold alternative to ORWSS (VT-ORWSS) which is robust and powerful across a variety of genetic architectures.