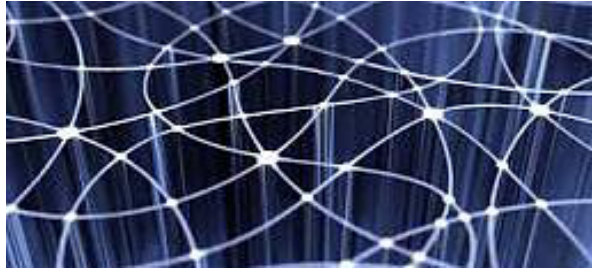


# High-performance Signal and Data Processing: Challenges in Astro- and Particle Physics and Radio Astronomy Instrumentation



Contribution ID: 43

Type: **not specified**

## Likelihood Analysis of Higgs anomalous couplings

An investigation into Higgs production, this study explores beyond Standard Model anomalous couplings in weak vector boson fusion. It is found that in the HWW vertex, effective strengths for anomalous couplings can be described by two constants  $\lambda$  and  $\lambda'$  respectively. In an effort to discover how much data need be accrued by electron/positron colliders, to discriminate between the SM and such BSM physics the concept of likelihood from statistics is included. The study involves the Monte Carlo generation of millions of events, and hundreds of thousands of CPU intensive test statistics required to determine the sensitivity of model discrimination. In addition, this processor-heavy analysis makes for a useful benchmarking tool of Intel and ARM processors being considered in the WITS Massive Affordable Computing project.

**Primary author:** Mr AMAR, Gilad (University of Witwatersrand)

**Co-author:** Mr VON BUDDENBROCK, Stefan (University of Witwatersrand)

**Presenter:** Mr AMAR, Gilad (University of Witwatersrand)