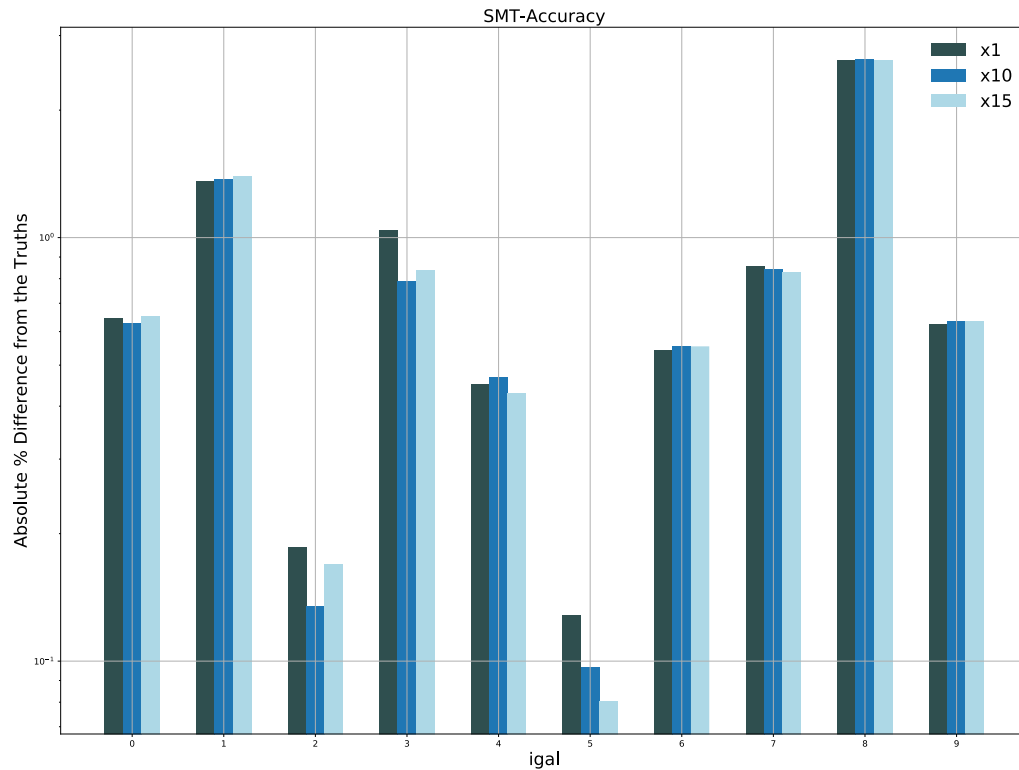# GQPMC Report

James Kyubin Kwon

1. **SMT - Accuracy**

Plots are attached below.

Result summary:

a) The accuracy of the convergent median did not show significant difference between x10 and x15; x10 performs better for half of the samples and x15 performs better for the rest.

b) It seems that using x10 and x15 retrieves at least comparable or better accuracy than that what is obtained by x1. Choosing between x10 and x15 is likely to be affected by the performance of the optimization. I will include this as the subtest of max iteration test.

2. **SMT – Convergence Speed**

Result summary:

a) except for galaxy 4 (igal3) the convergence was achieved faster in x10 and x15 than it did in x1. But this is not meaningful as better accuracies were achieved by x10 and x15.

b) As stated, for most of the galaxies, if not all, x10 and x15 performed better than x1.

c) The convergence was achieved just before the burn-in iteration was completed (10000 iteration).

d) The PSRF plots were examined to check when PSRF went below 1.1, and again, it did not show any significant difference between the x10 and x15.

When looking at the plots, note that the Δy are different and Δx are different for each plot.

specphoto galaxy 4 walker-percentile plot

specphoto galaxy 4 PSRF plot

specphoto galaxy 5 walker-percentile plot

specphoto galaxy 5 PSRF plot

specphoto galaxy 6 walker-percentile plot

specphoto galaxy 6 PSRF plot

specphoto galaxy 7 walker-percentile plot

specphoto galaxy 7 PSRF plot

specphoto galaxy 8 walker-percentile plot

specphoto galaxy 8 PSRF plot

specphoto galaxy 9 walker-percentile plot

specphoto galaxy 9 PSRF plot

specphoto galaxy 10 walker-percentile plot

specphoto galaxy 10 PSRF plot