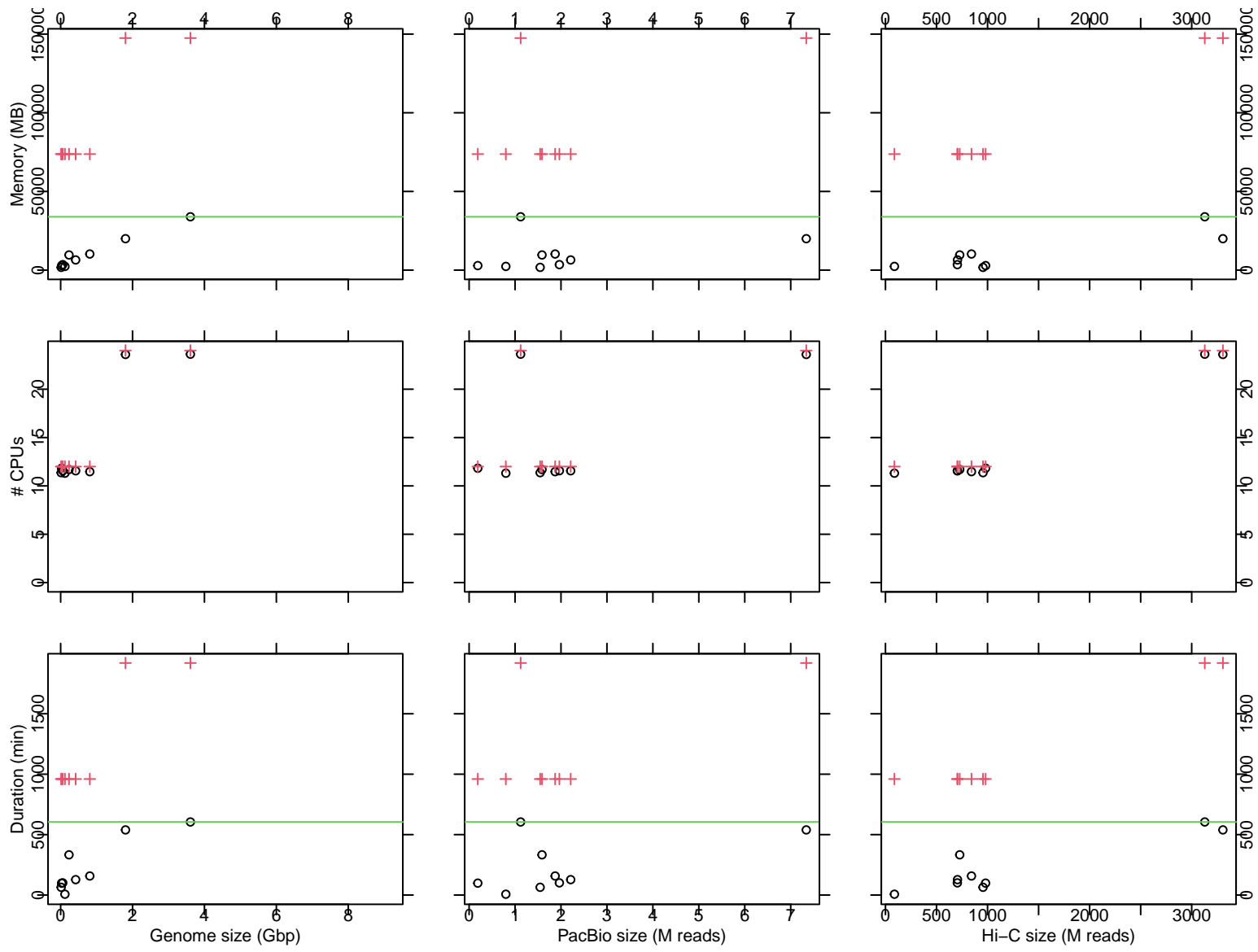
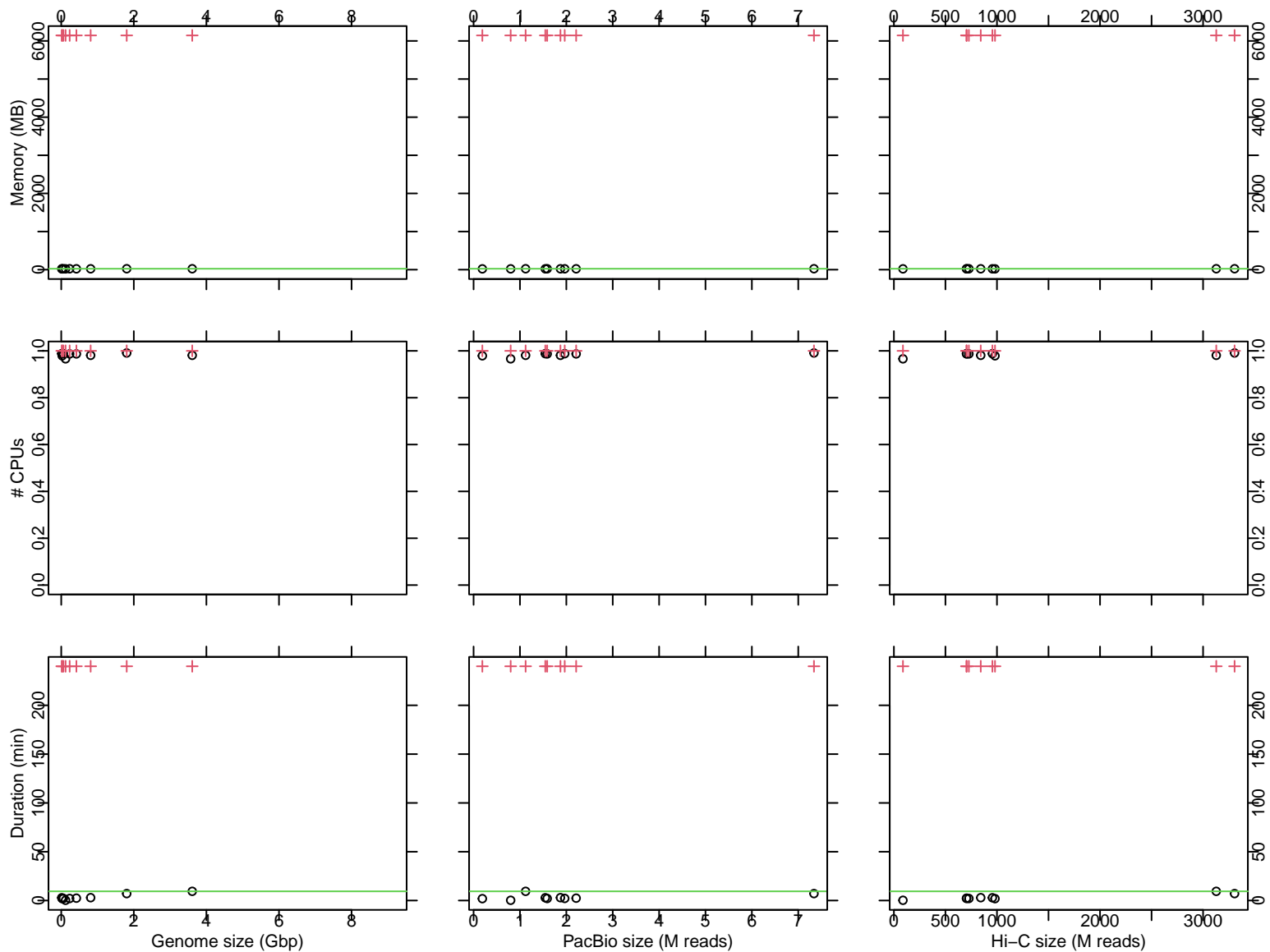


sanger-tol/readmapping - start

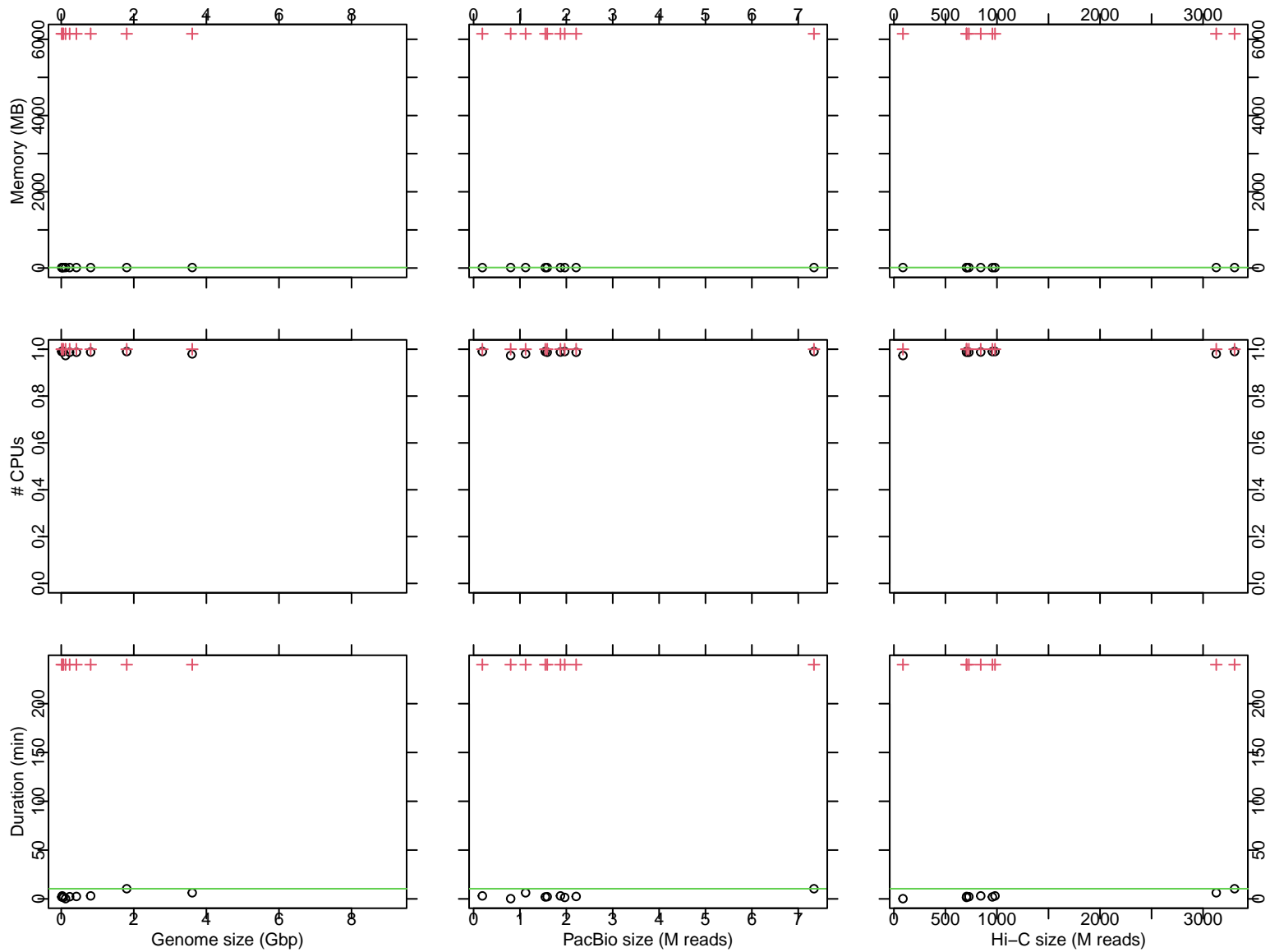
# ALIGN\_HIC:BWAMEM2\_MEM



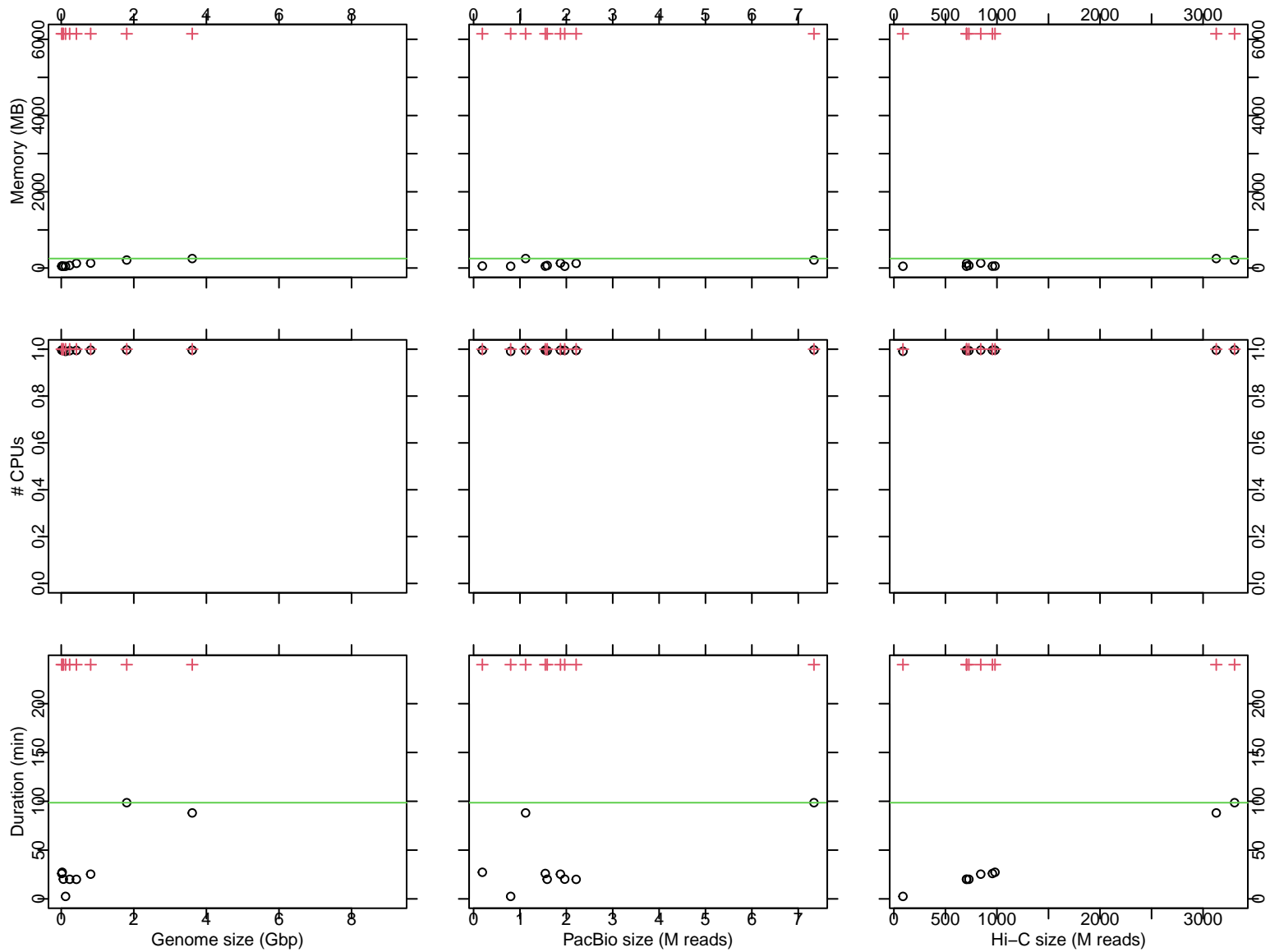
# ALIGN\_HIC:MARKDUP\_STATS:CONVERT\_STATS:SAMTOOLS\_FLAGSTAT



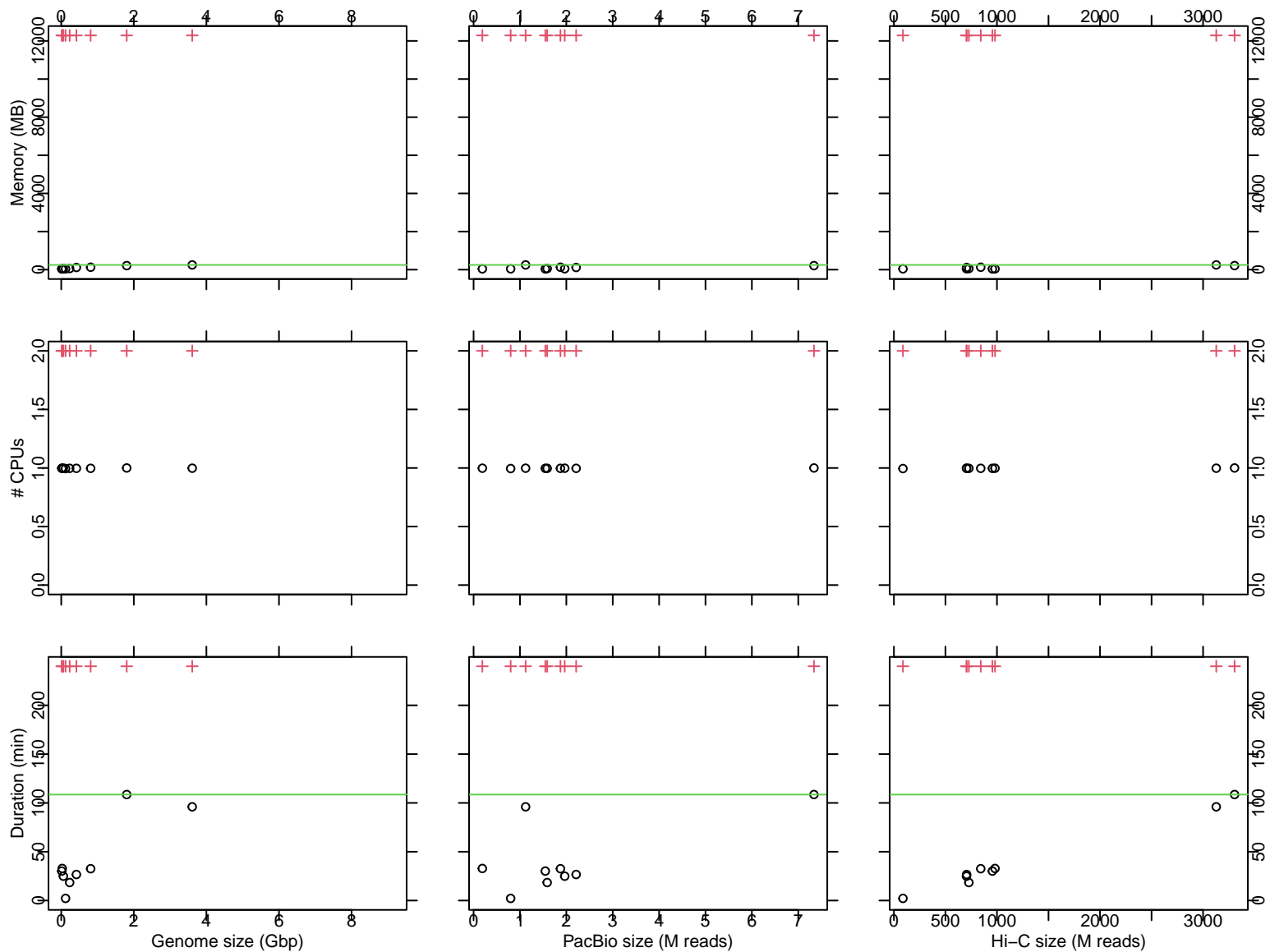
# ALIGN\_HIC:MARKDUP\_STATS:CONVERT\_STATS:SAMTOOLS\_IDXSTATS



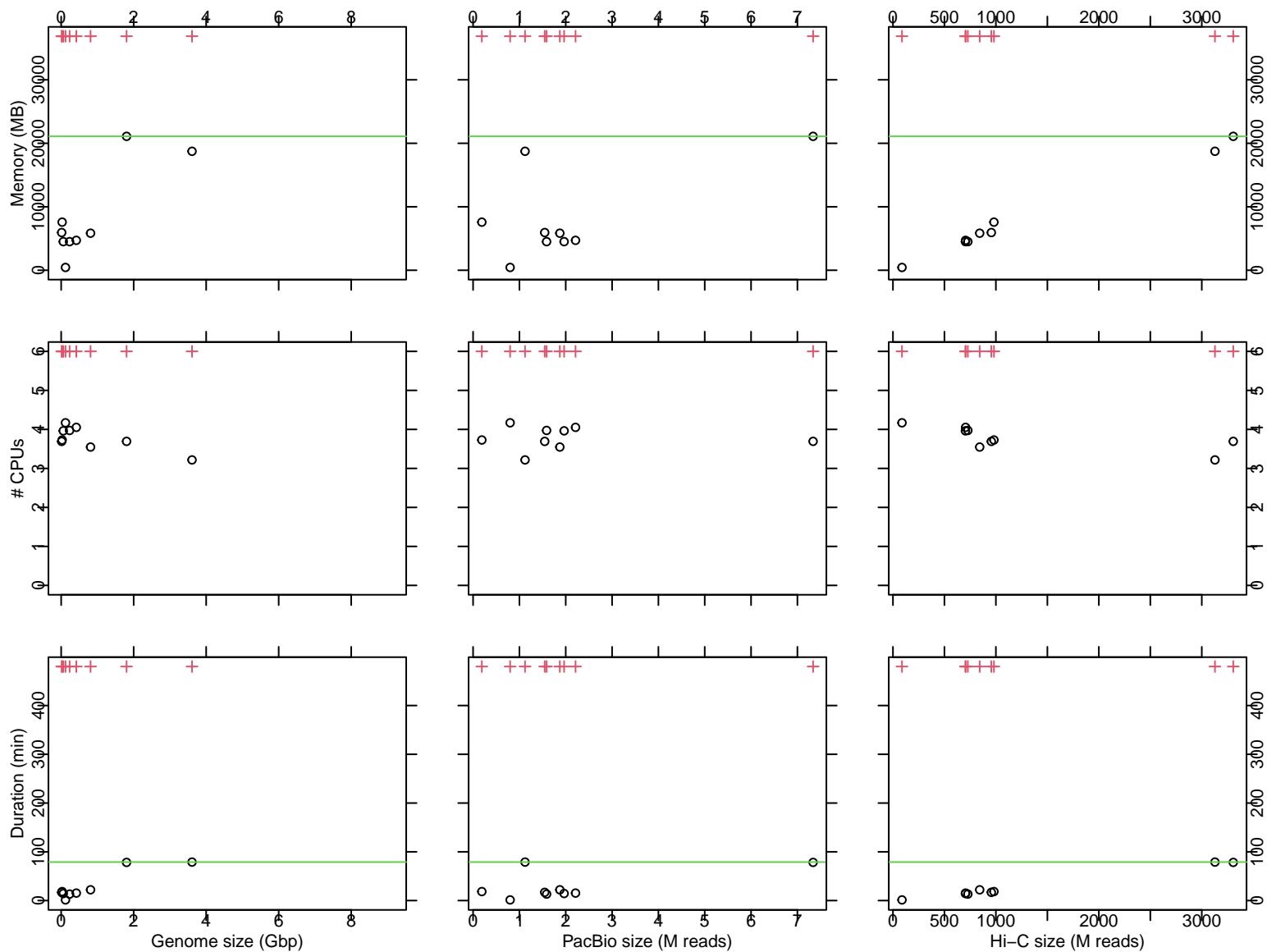
# ALIGN\_HIC:MARKDUP\_STATS:CONVERT\_STATS:SAMTOOLS\_STATS



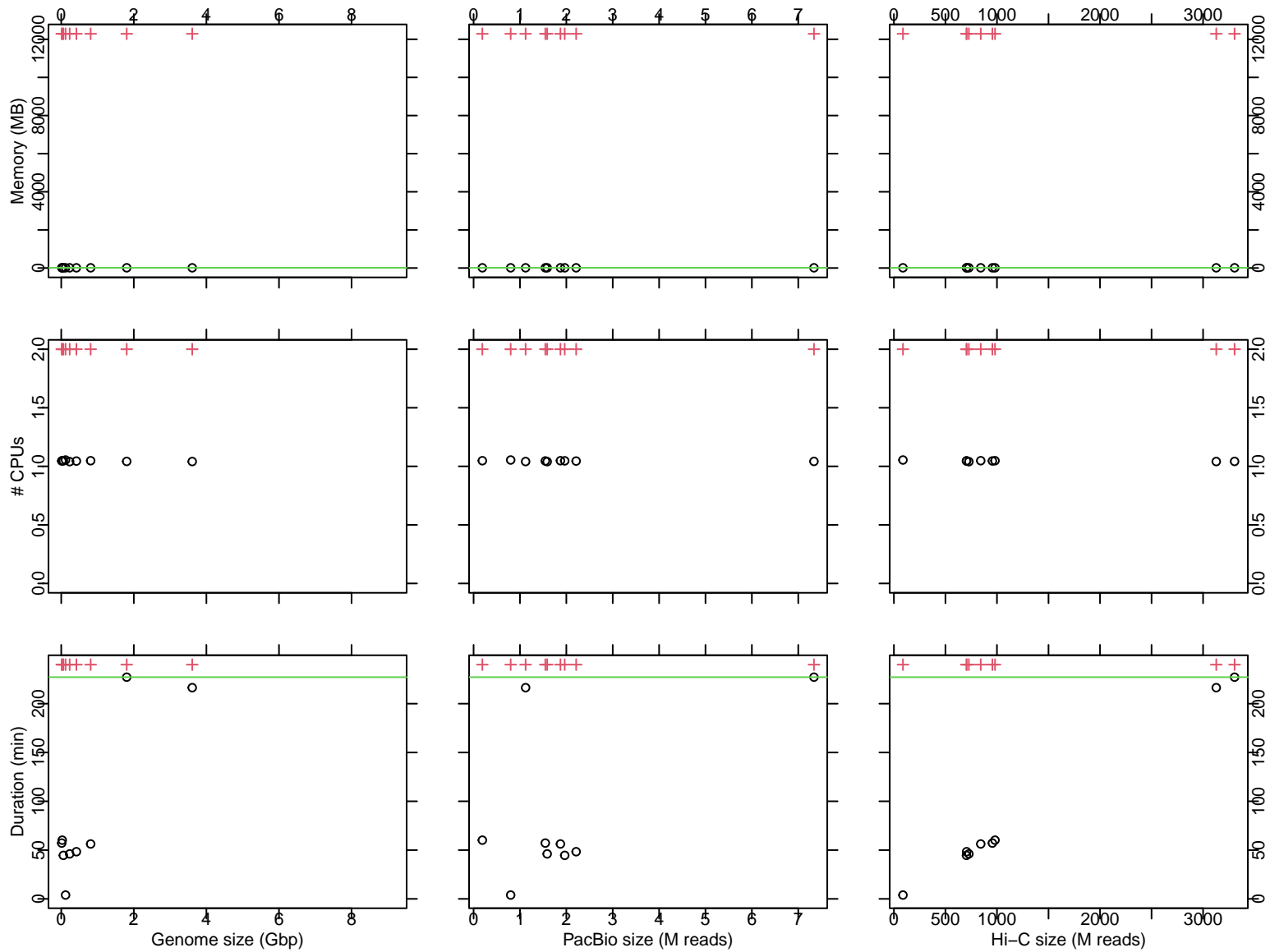
# ALIGN\_HIC:MARKDUP\_STATS:CONVERT\_STATS:SAMTOOLS\_VIEW



# ALIGN\_HIC:MARKDUP\_STATS:MARKDUPPLICATE:SAMTOOLS\_COLLATE

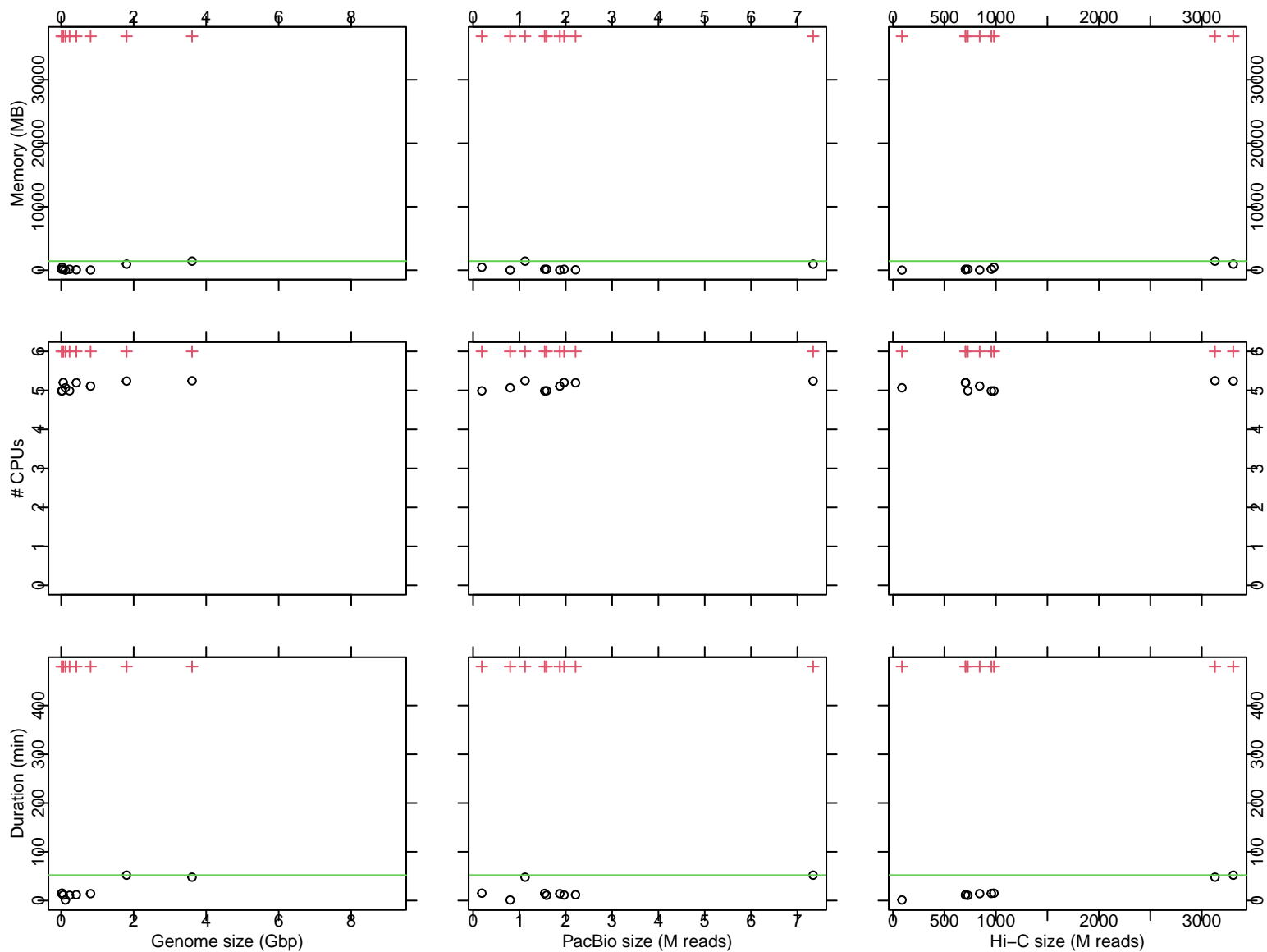


# ALIGN\_HIC:MARKDUP\_STATS:MARKDUPLICATE:SAMTOOLS\_FIXMATE

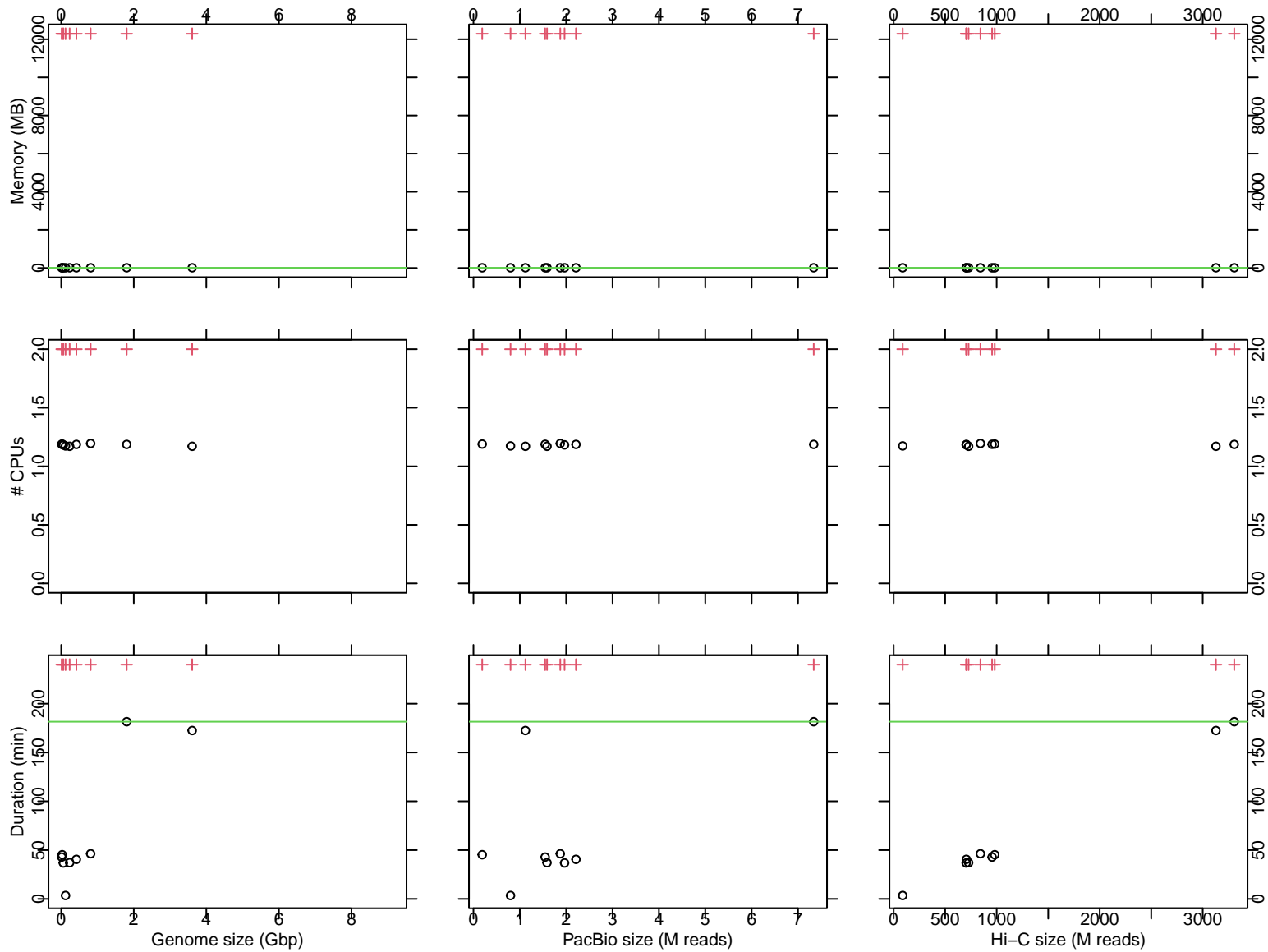




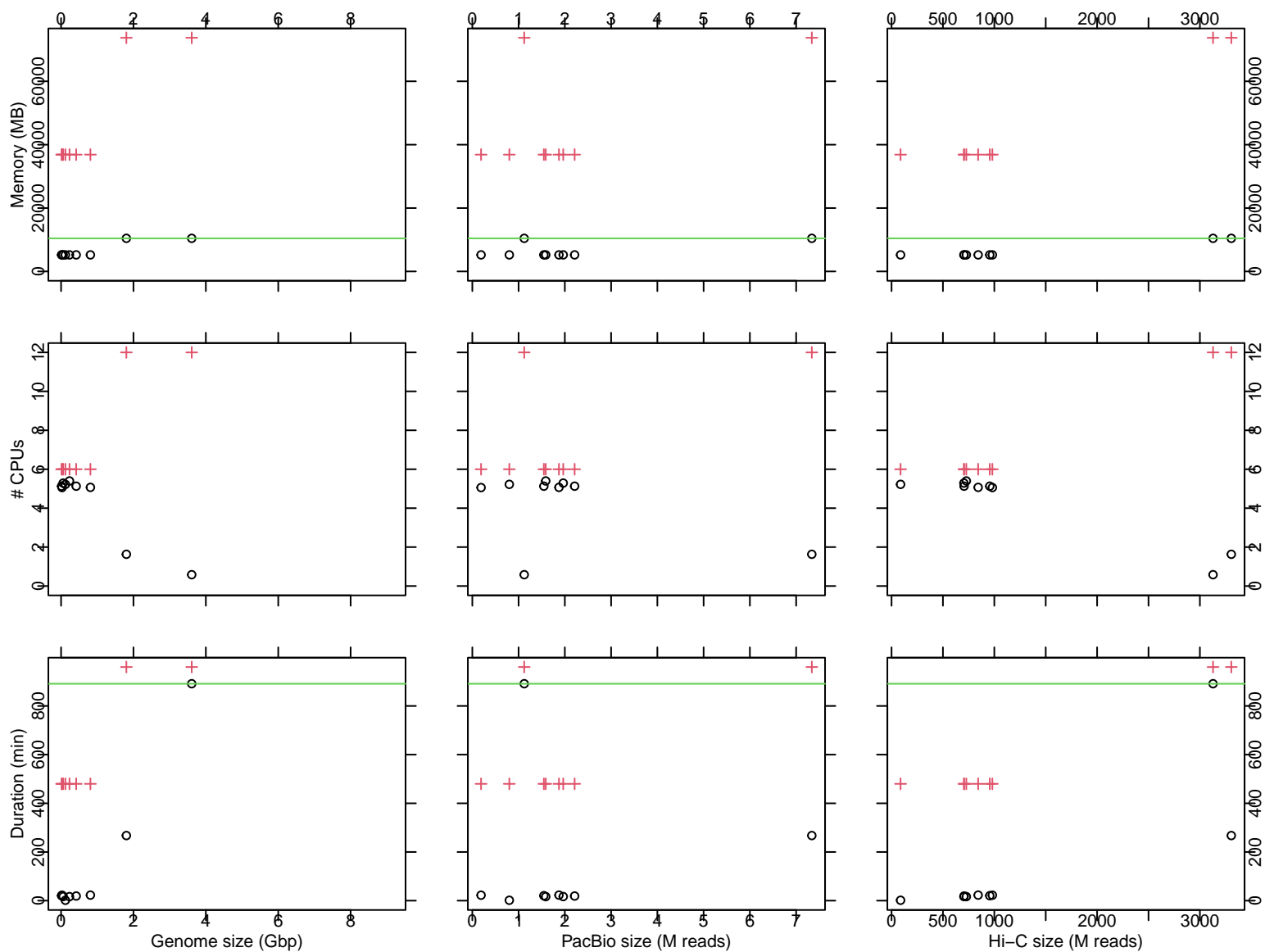
# ALIGN\_HIC:MARKDUP\_STATS:MARKDUPLICATE:SAMTOOLS\_MARKDUP



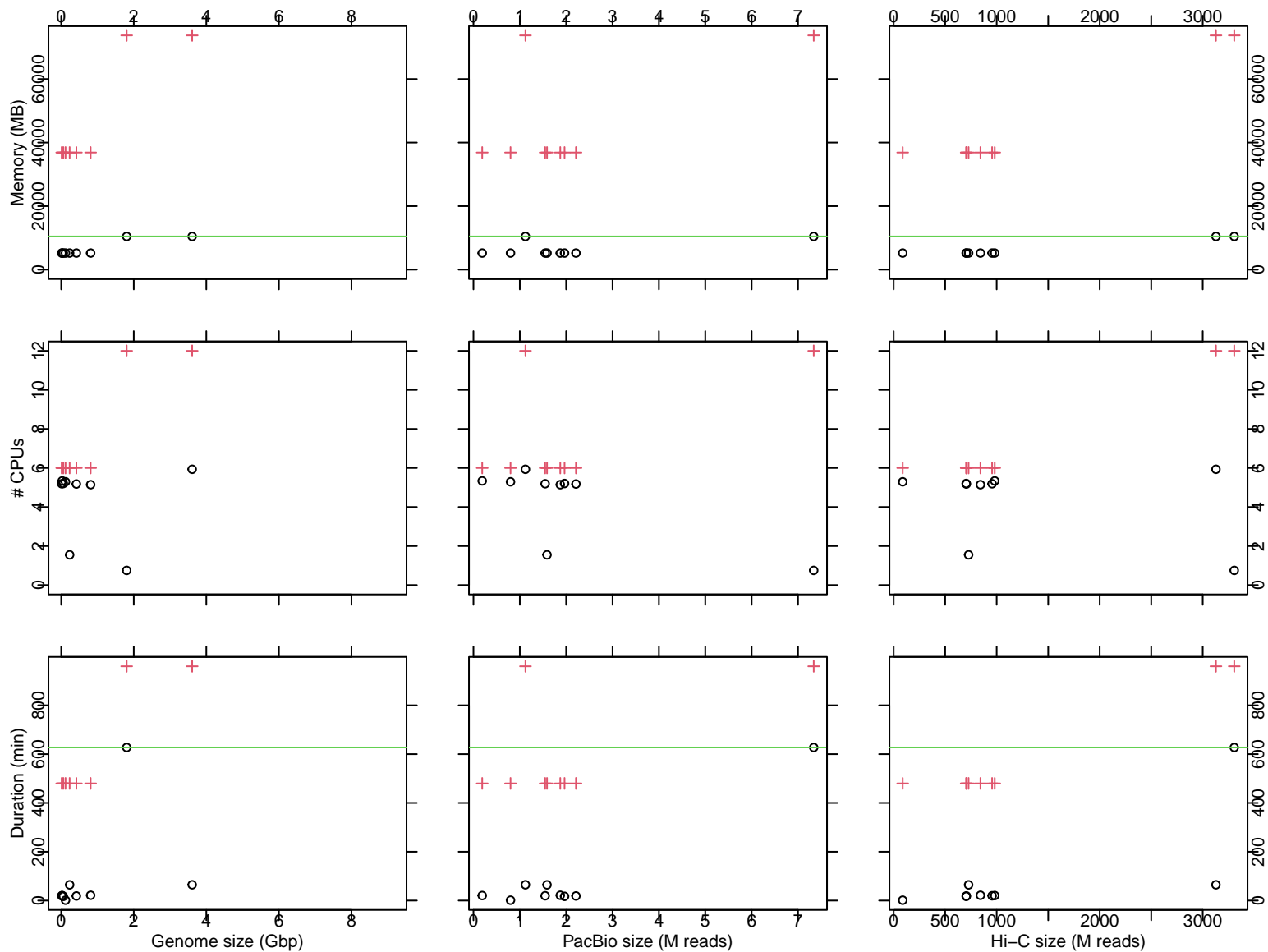
# ALIGN\_HIC:MARKDUP\_STATS:MARKDUPLICATE:SAMTOOLS\_MERGE



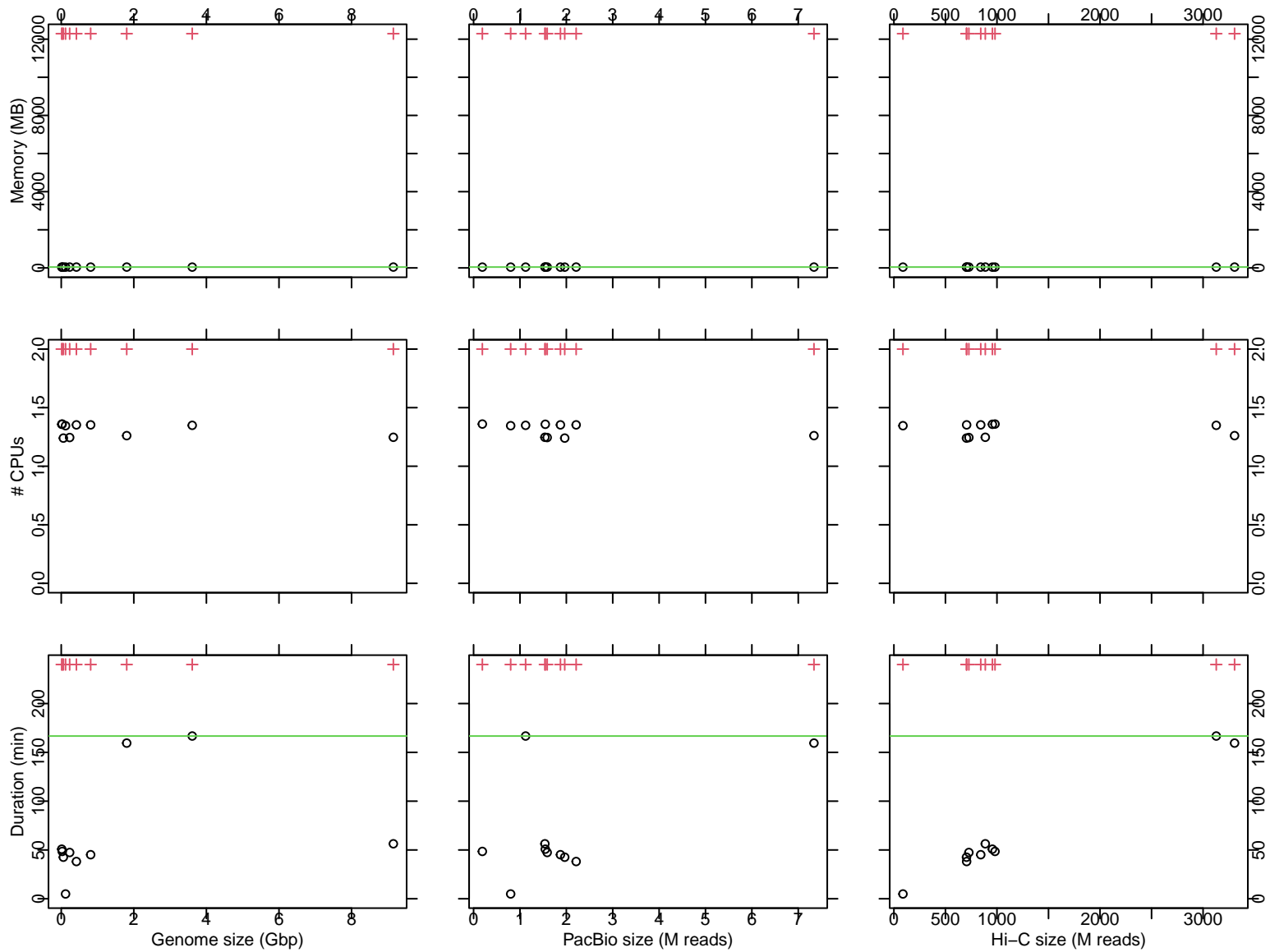
# ALIGN\_HIC:MARKDUP\_STATS:MARKDUPLICATE:SAMTOOLS\_SORT



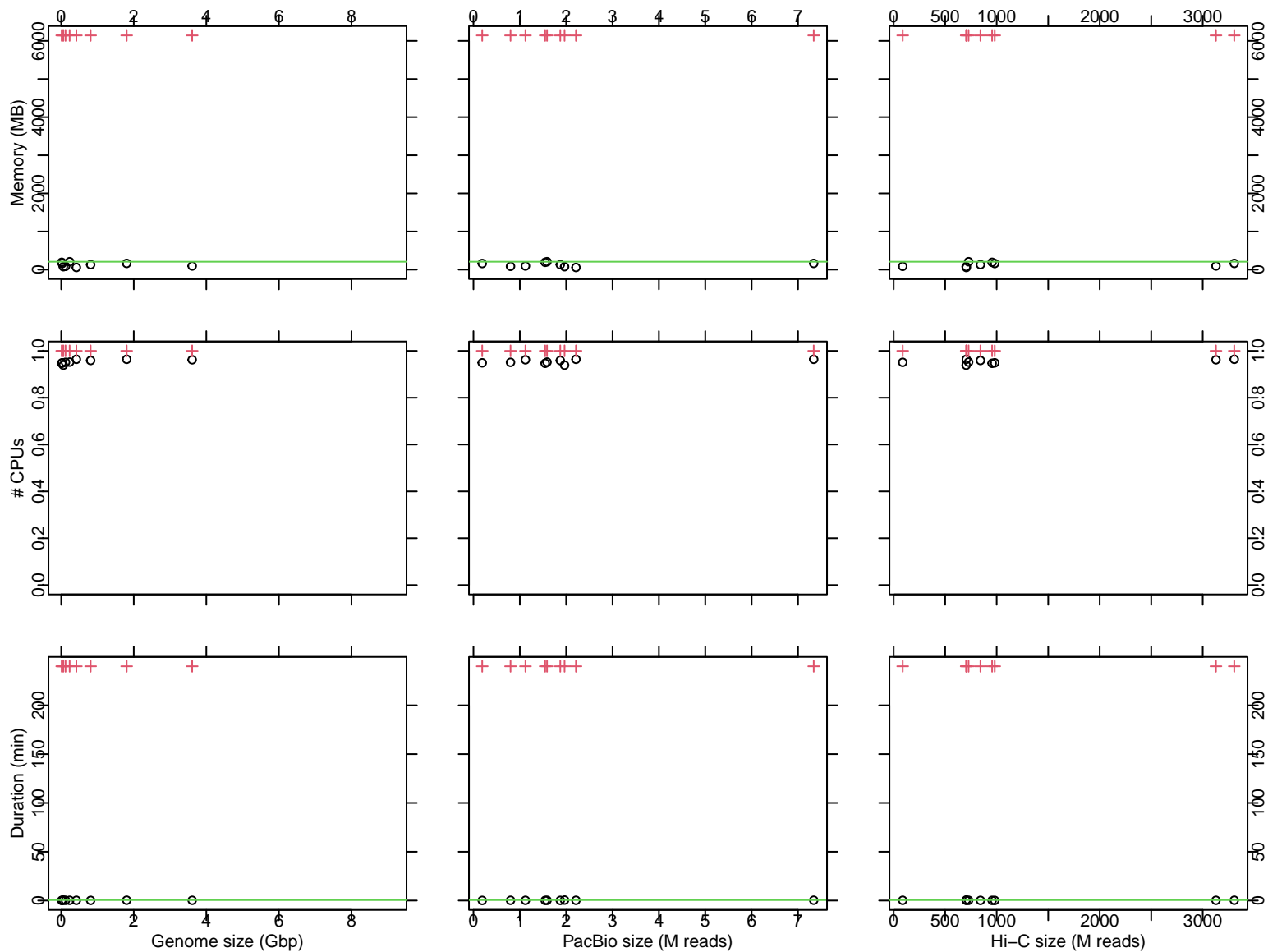
# ALIGN\_HIC:MARKDUP\_STATS:SAMTOOLS\_SORT



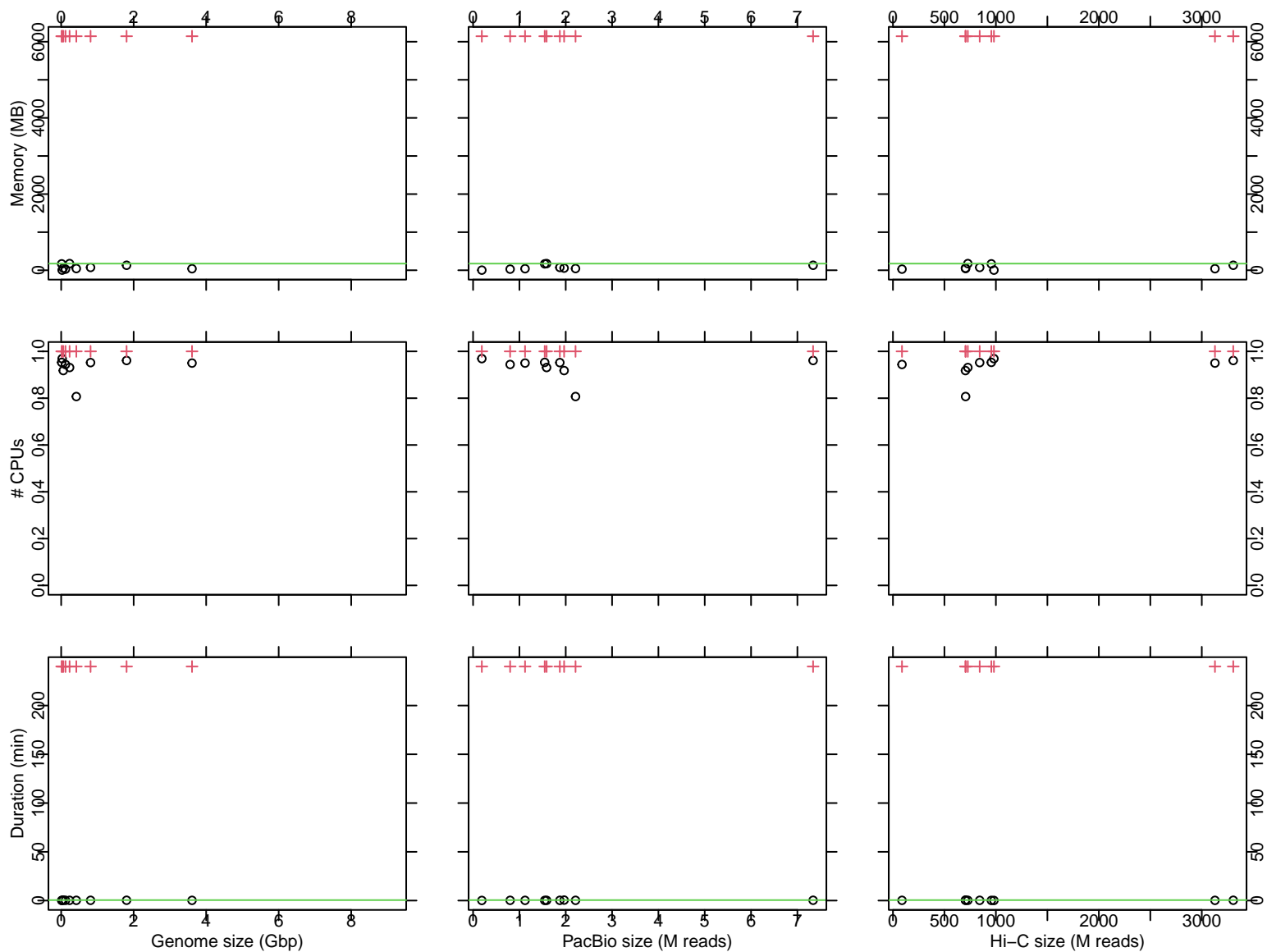
# ALIGN\_HIC:SAMTOOLS\_FASTQ



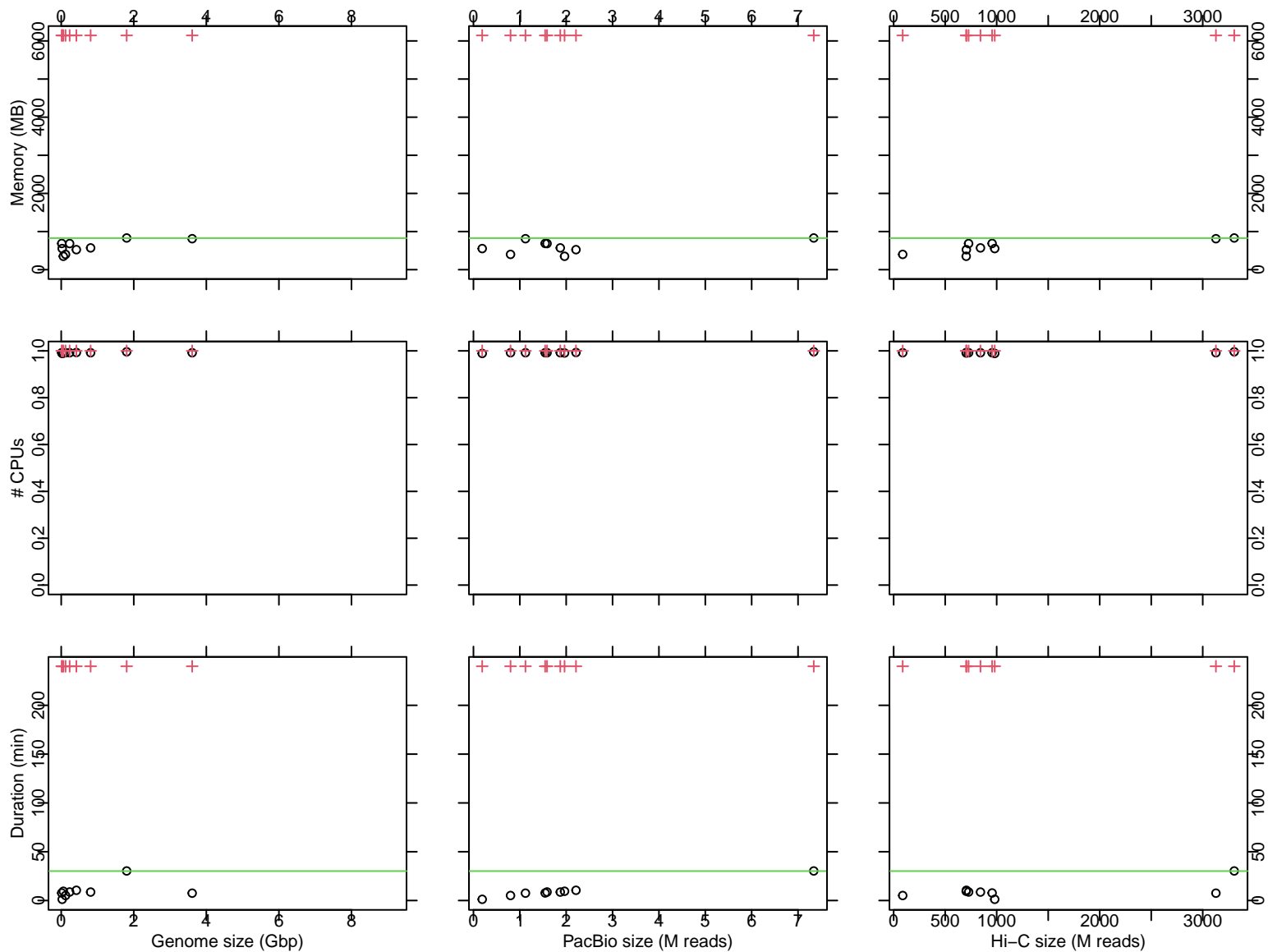
# ALIGN\_HIFI:CONVERT\_STATS:SAMTOOLS\_FLAGSTAT



# ALIGN\_HIFI:CONVERT\_STATS:SAMTOOLS\_IDXSTATS

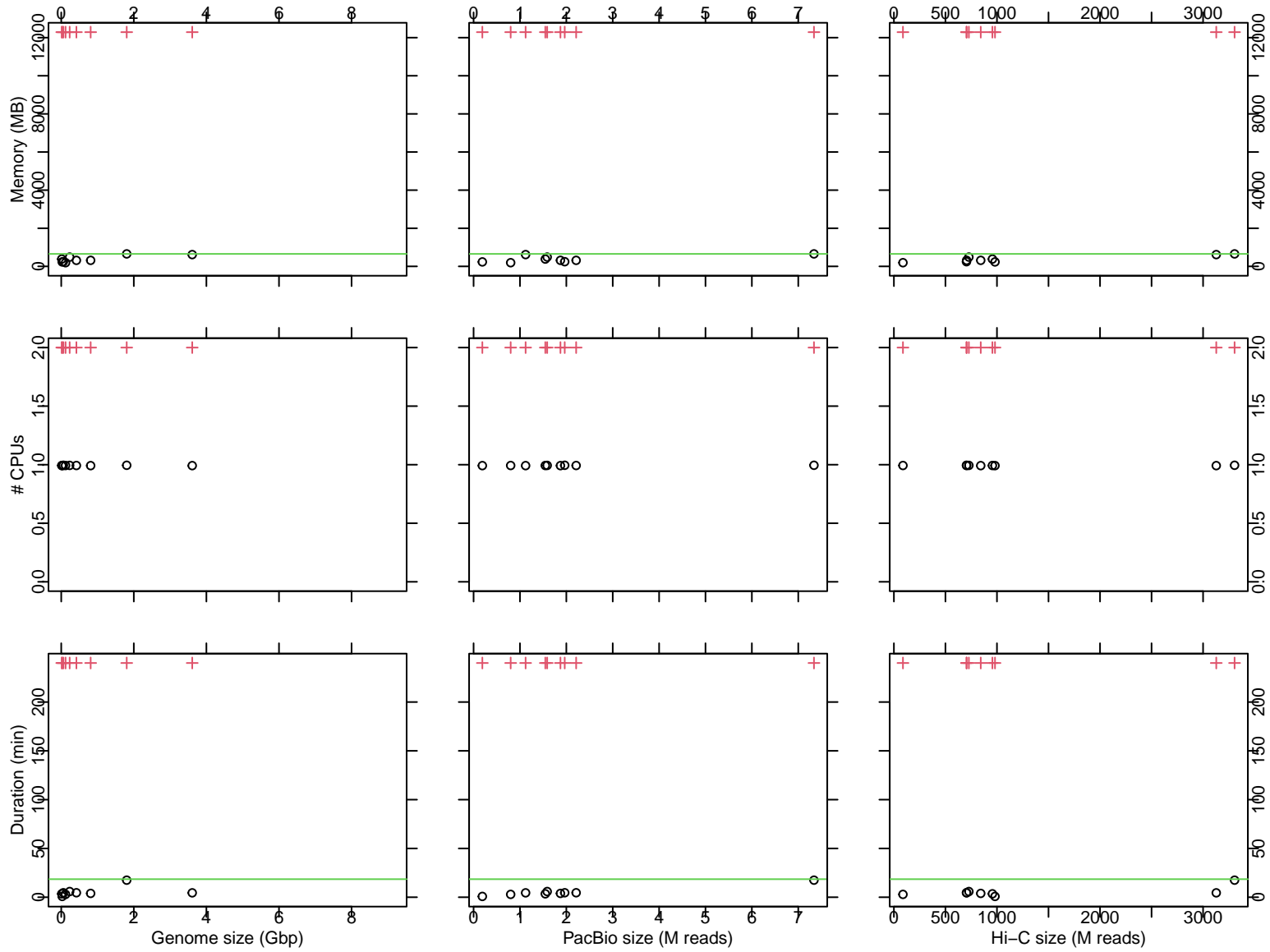


# ALIGN\_HIFI:CONVERT\_STATS:SAMTOOLS\_STATS

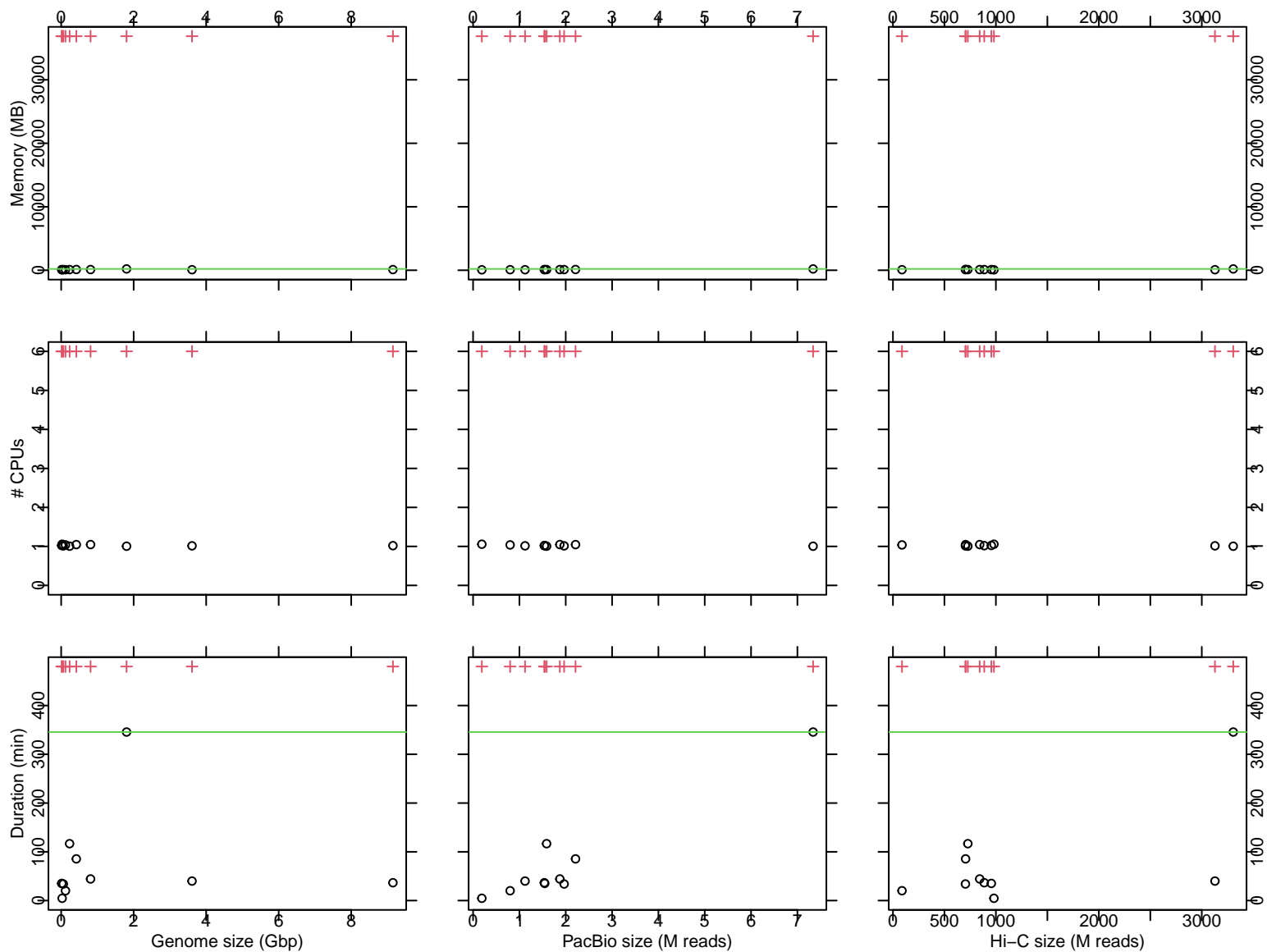




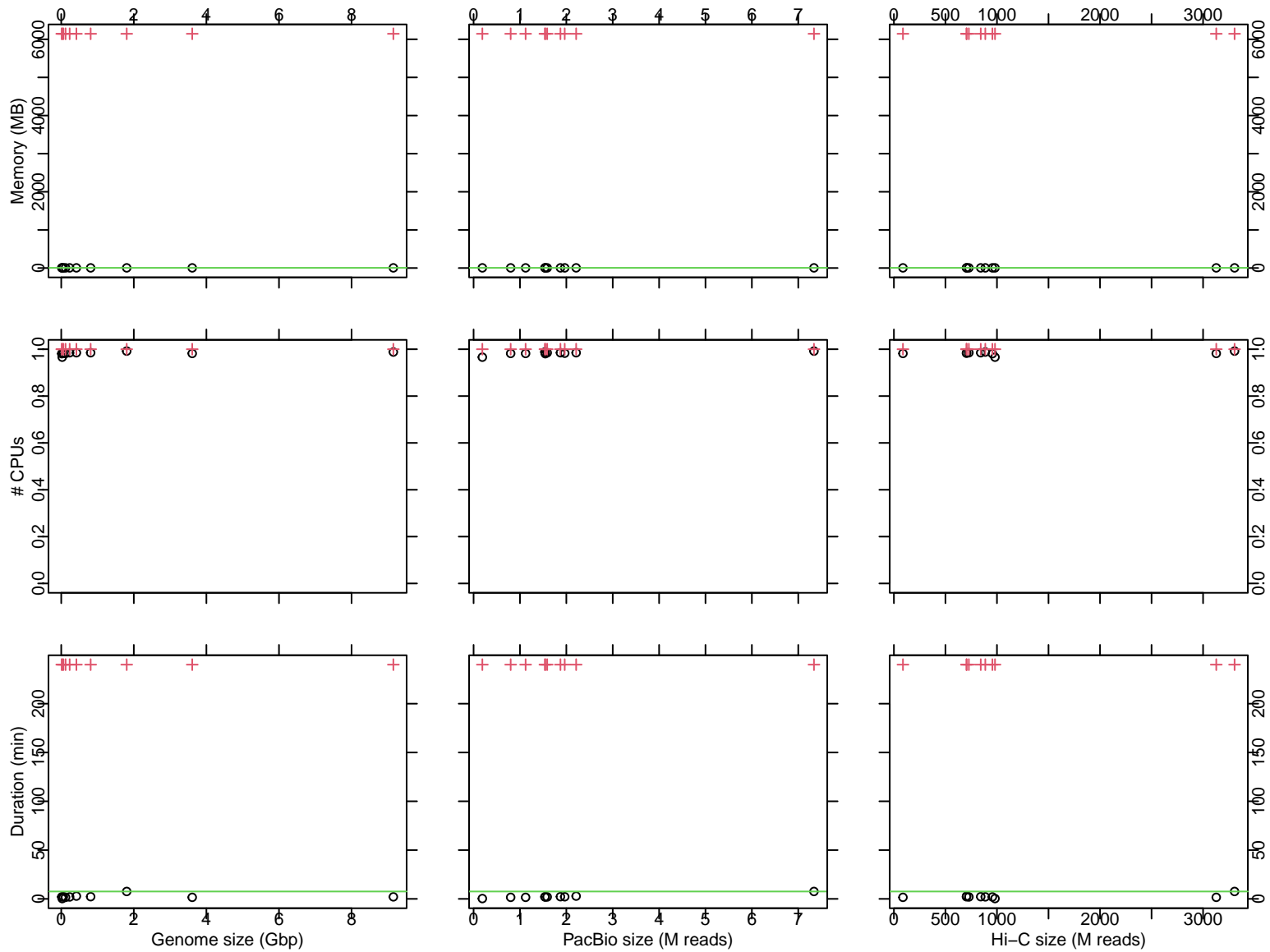
# ALIGN\_HIFI:CONVERT\_STATS:SAMTOOLS\_VIEW



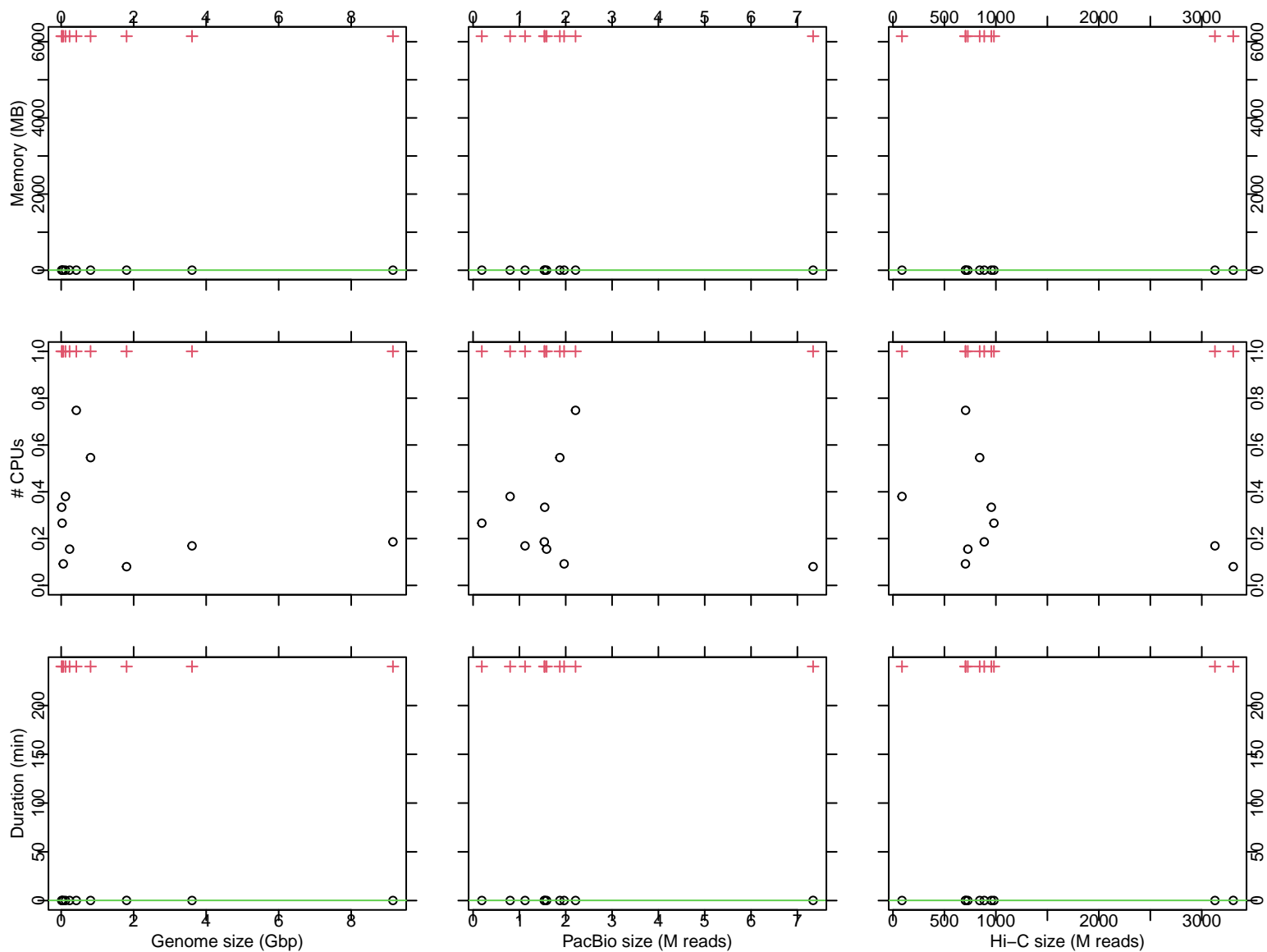
# ALIGN\_HIFI:FILTER\_PACBIO:BLAST\_BLASTN



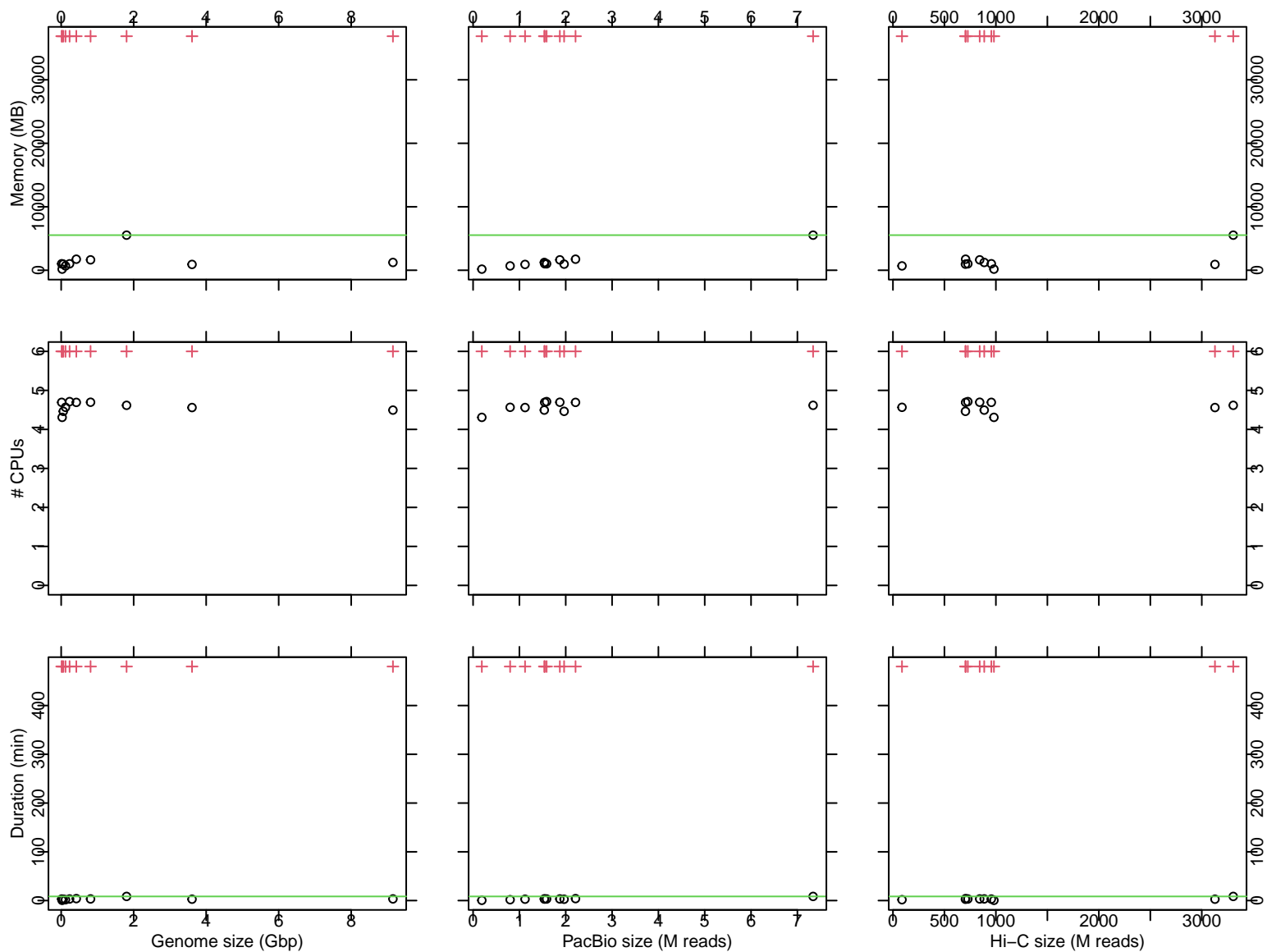
# ALIGN\_HIFI:FILTER\_PACBIO:GUNZIP



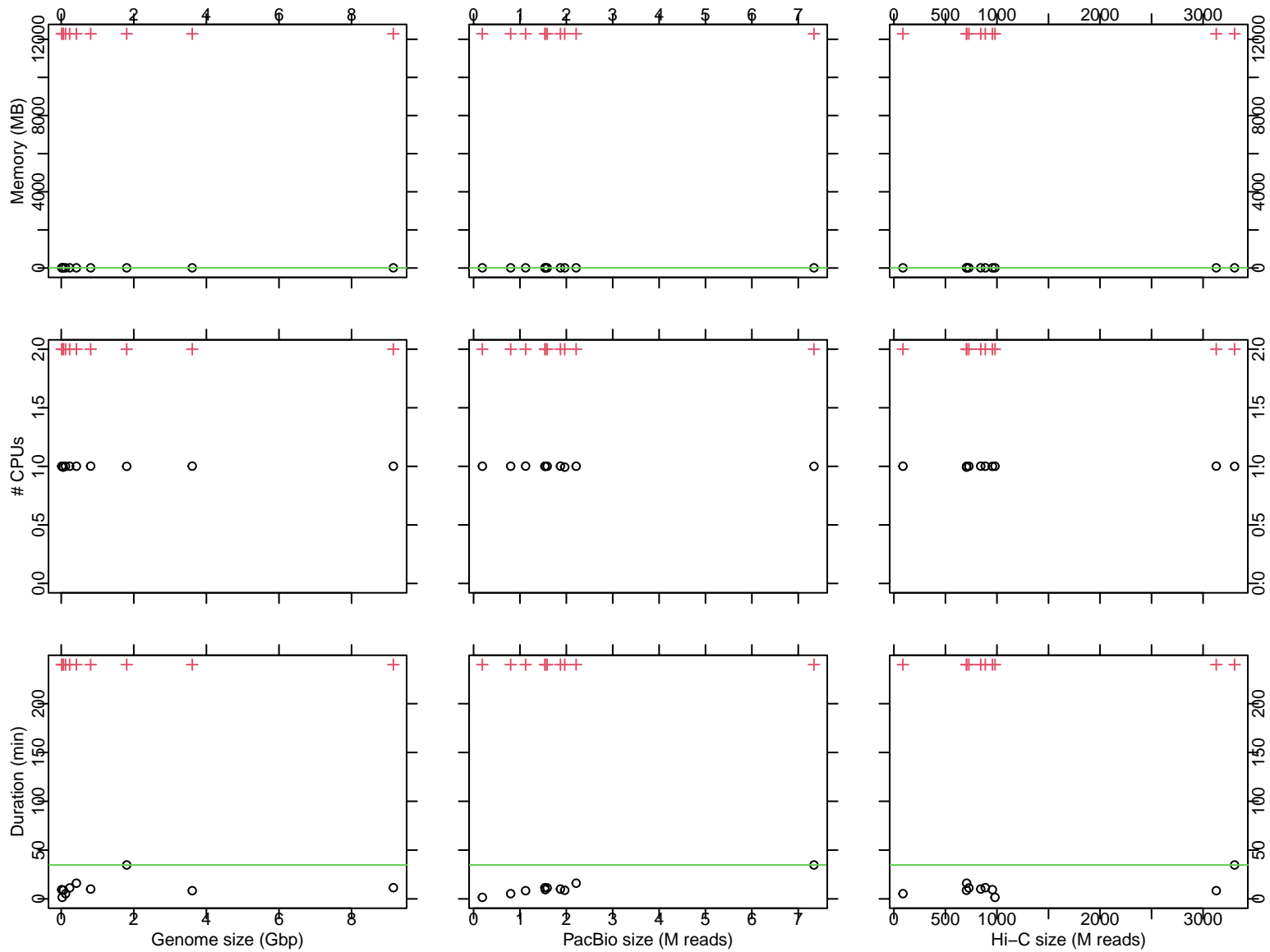
# ALIGN\_HIFI:FILTER\_PACBIO:PACBIO\_FILTER



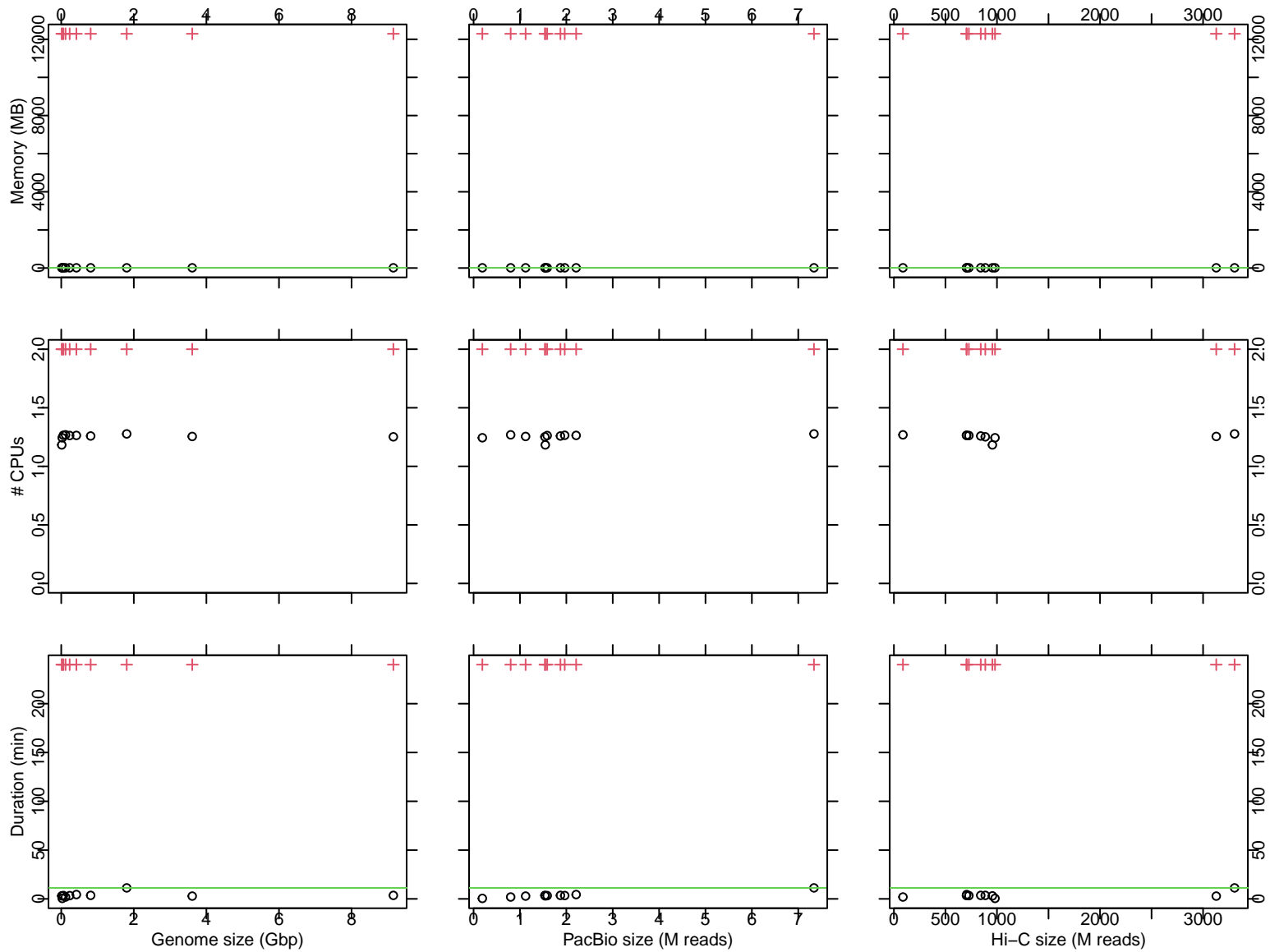
# ALIGN\_HIFI:FILTER\_PACBIO:SAMTOOLS\_COLLATE



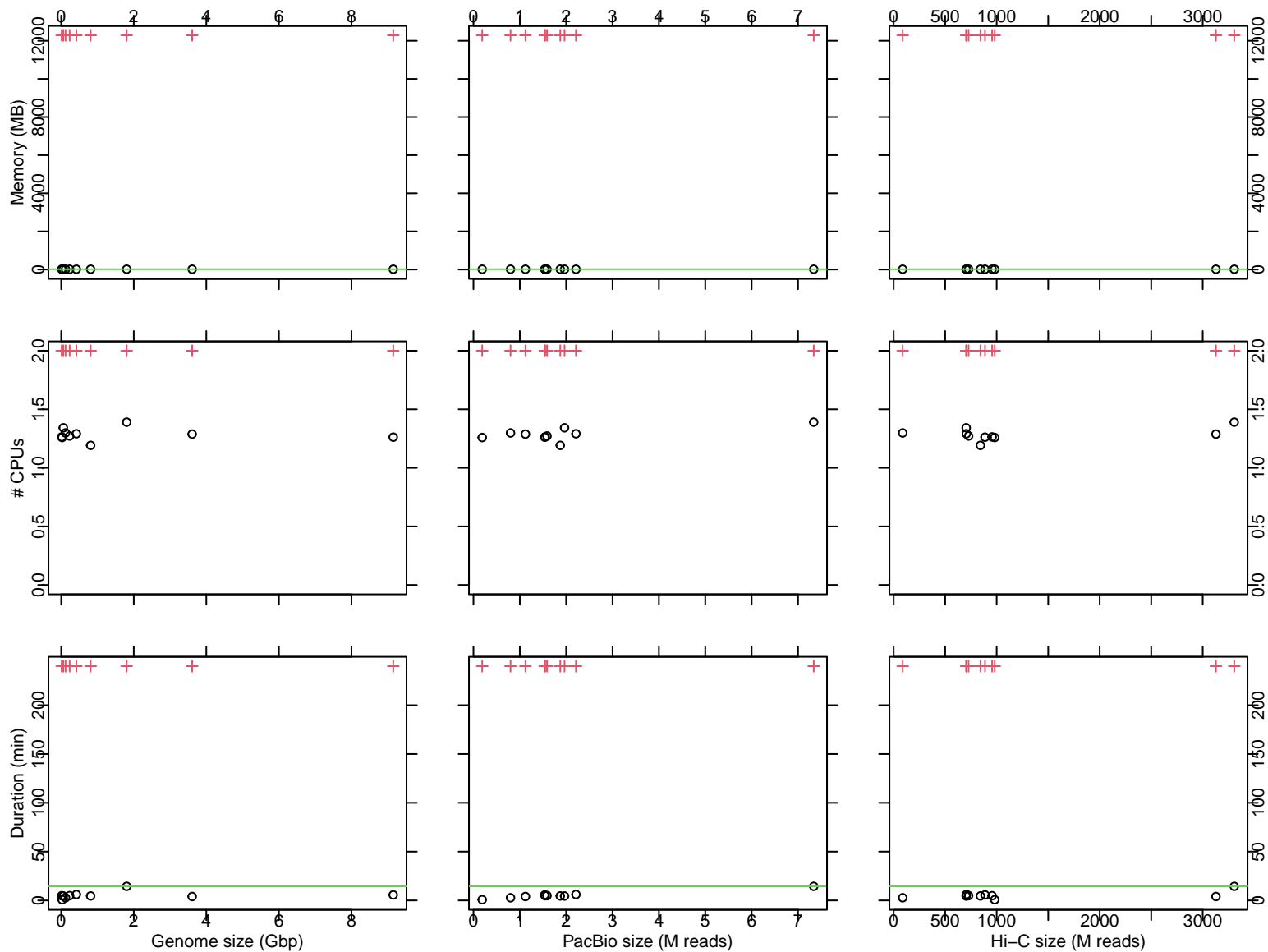
# ALIGN\_HIFI:FILTER\_PACBIO:SAMTOOLS\_CONVERT



# ALIGN\_HIFI:FILTER\_PACBIO:SAMTOOLS\_FASTA

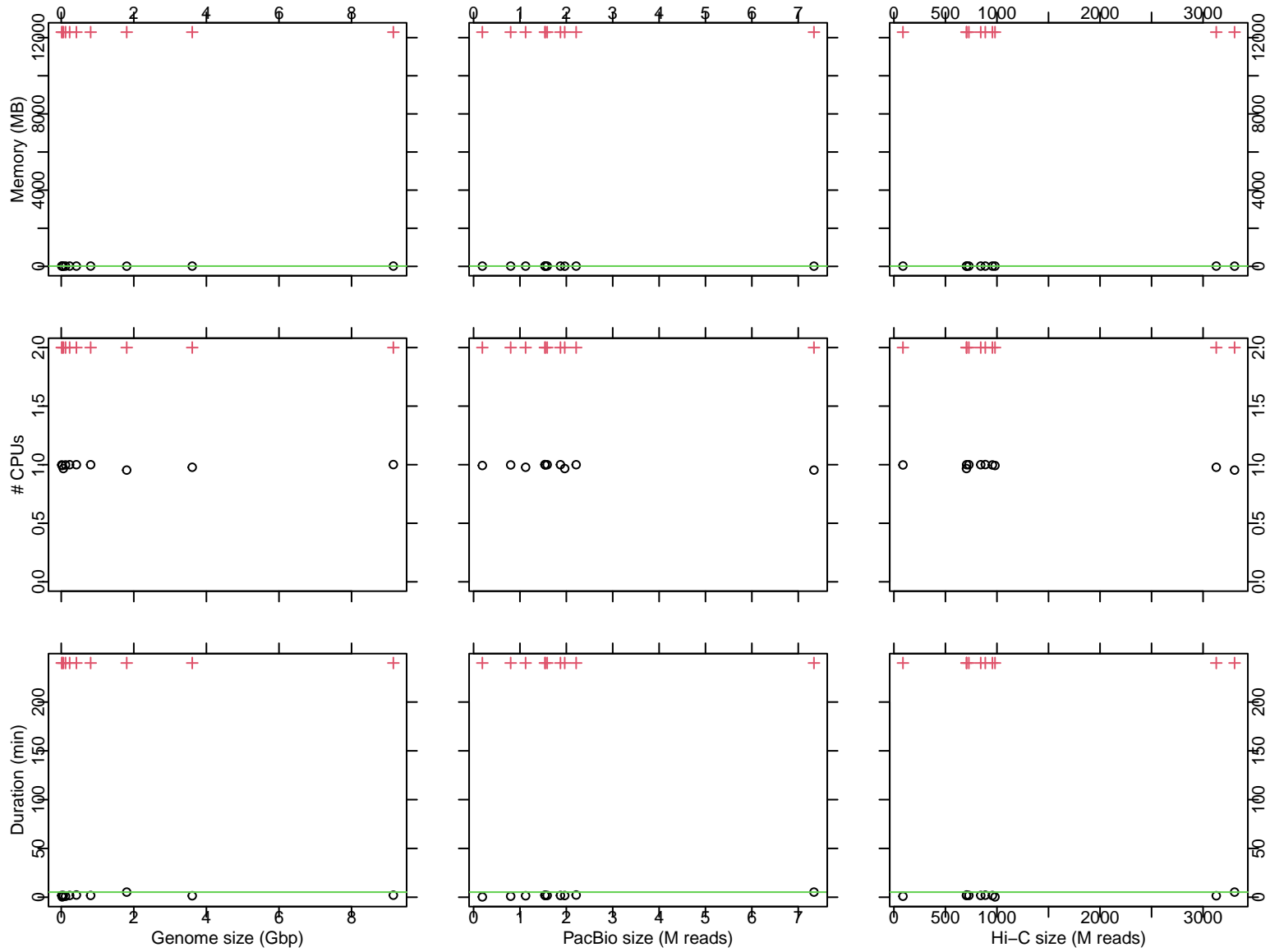


# ALIGN\_HIFI:FILTER\_PACBIO:SAMTOOLS\_FASTQ

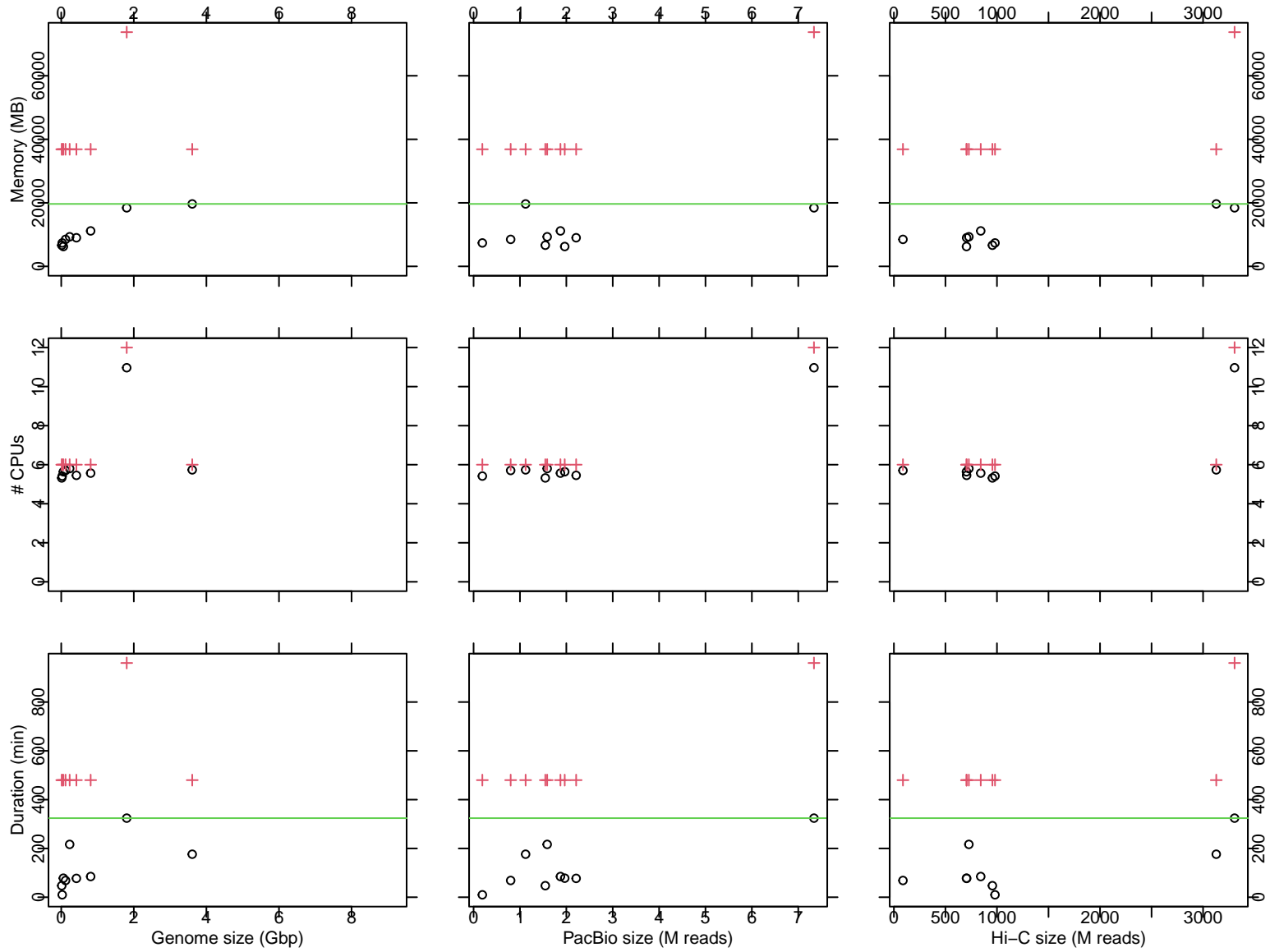




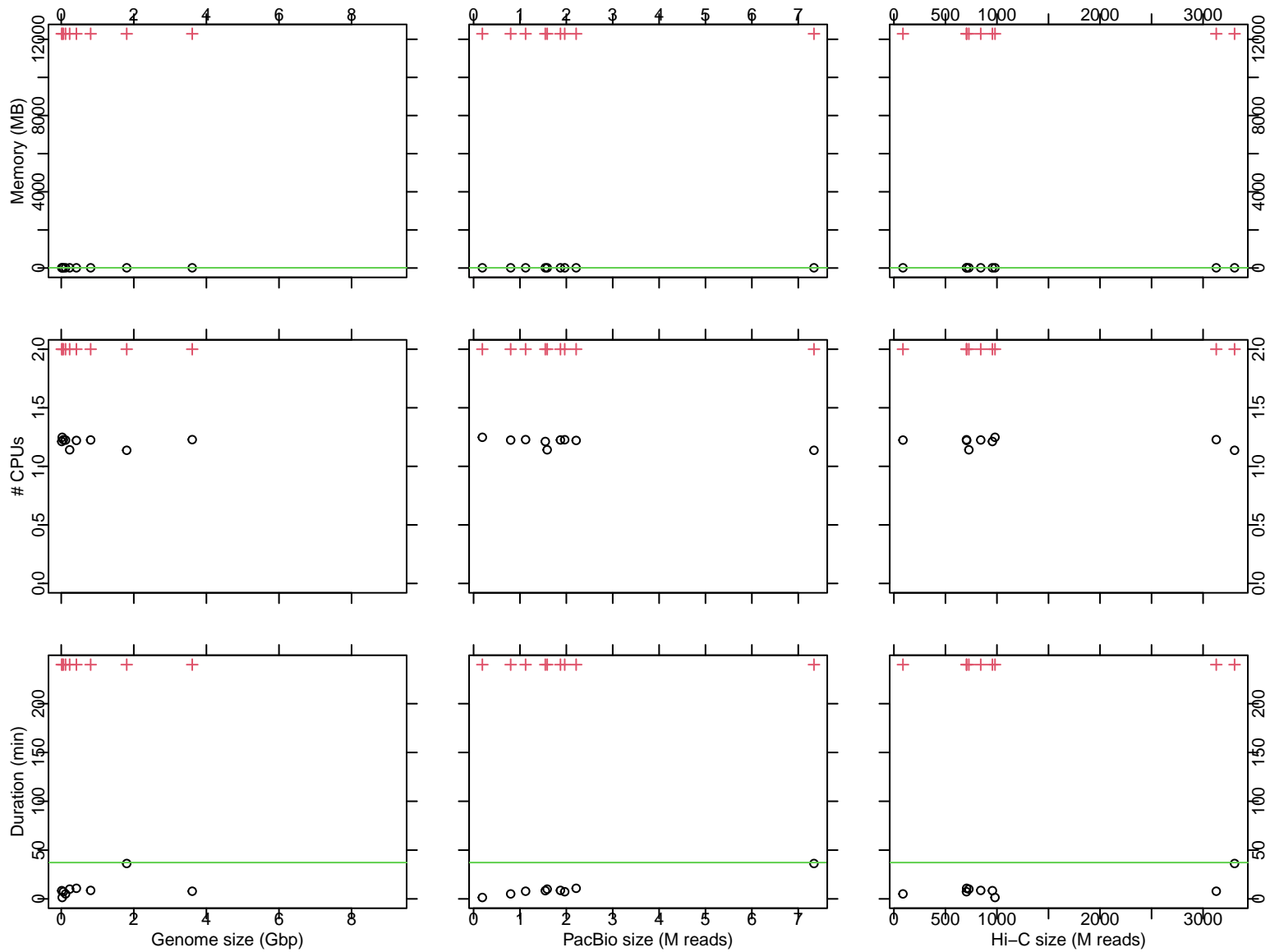
# ALIGN\_HIFI:FILTER\_PACBIO:SAMTOOLS\_FILTER



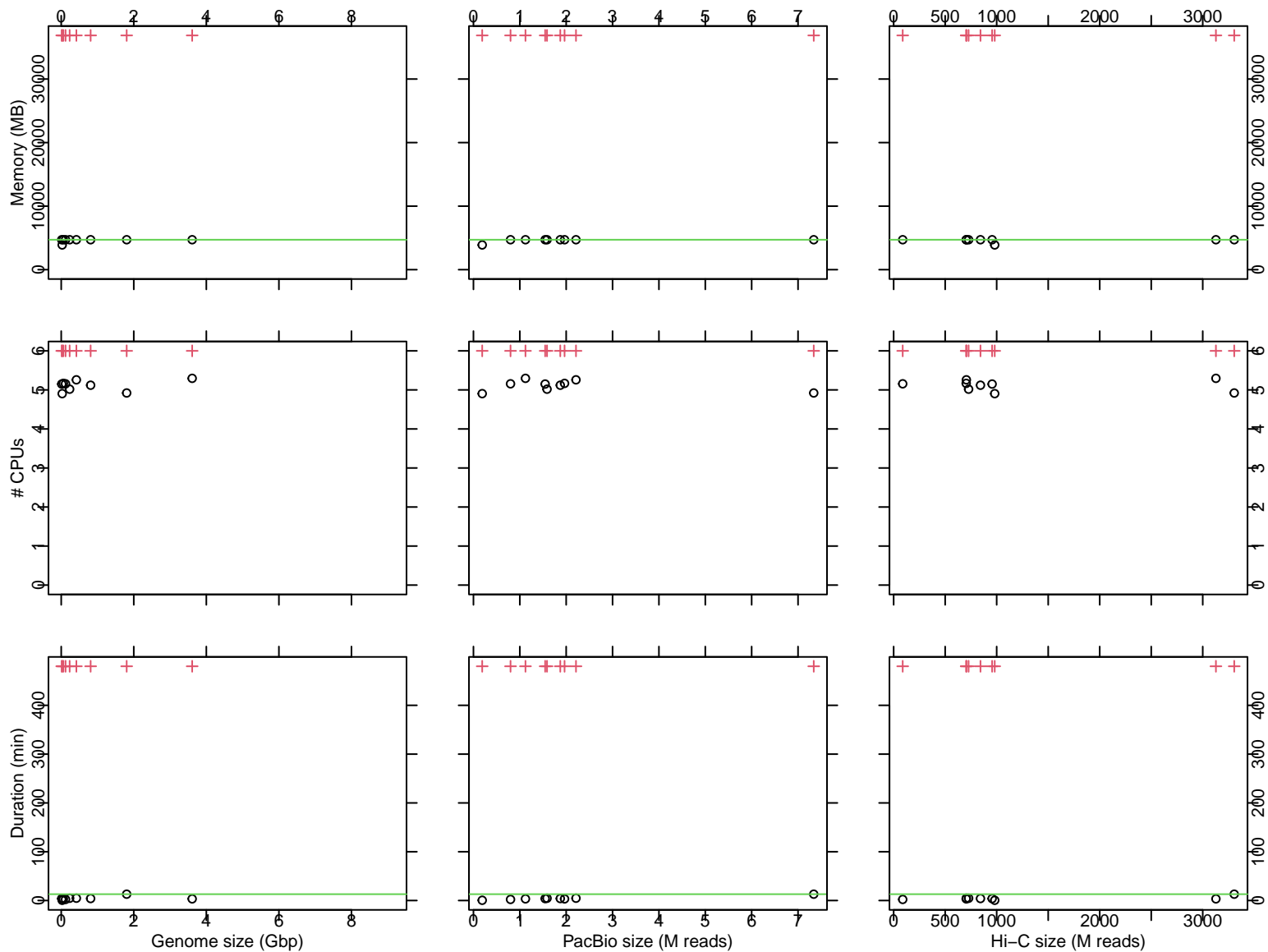
# ALIGN\_HIFI:MINIMAP2\_ALIGN



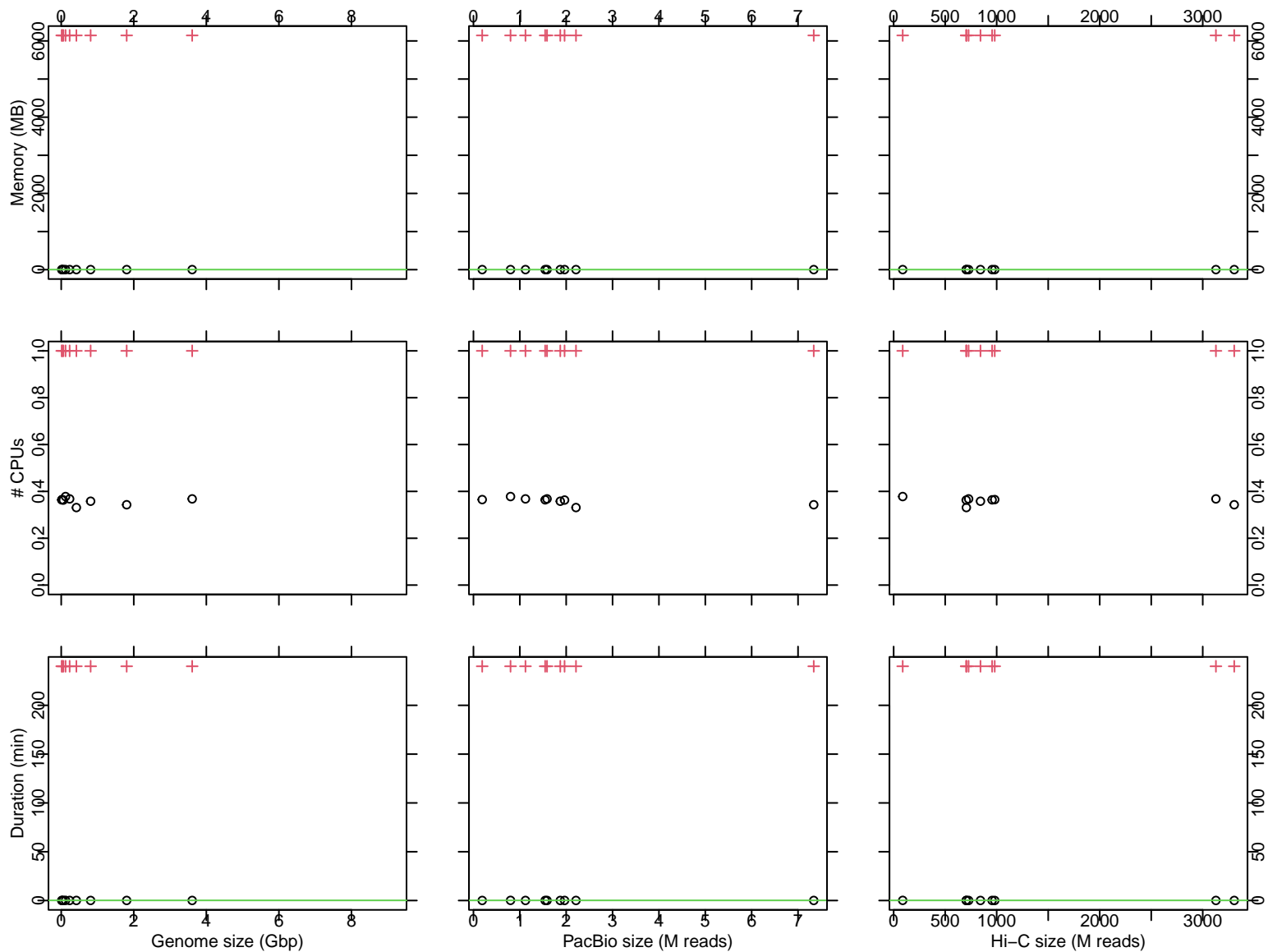
# ALIGN\_HIFI:SAMTOOLS\_MERGE



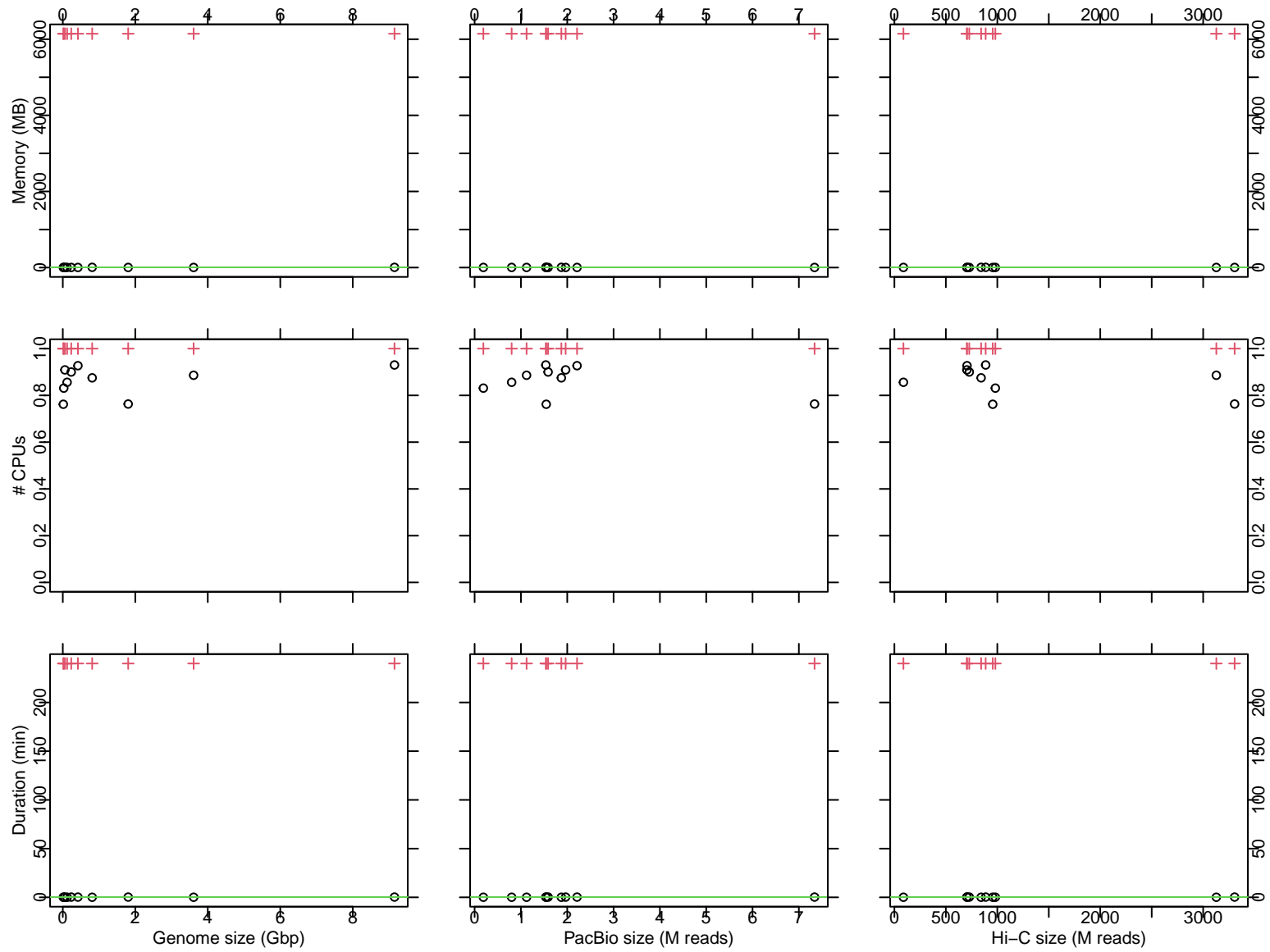
# ALIGN\_HIFI:SAMTOOLS\_SORT



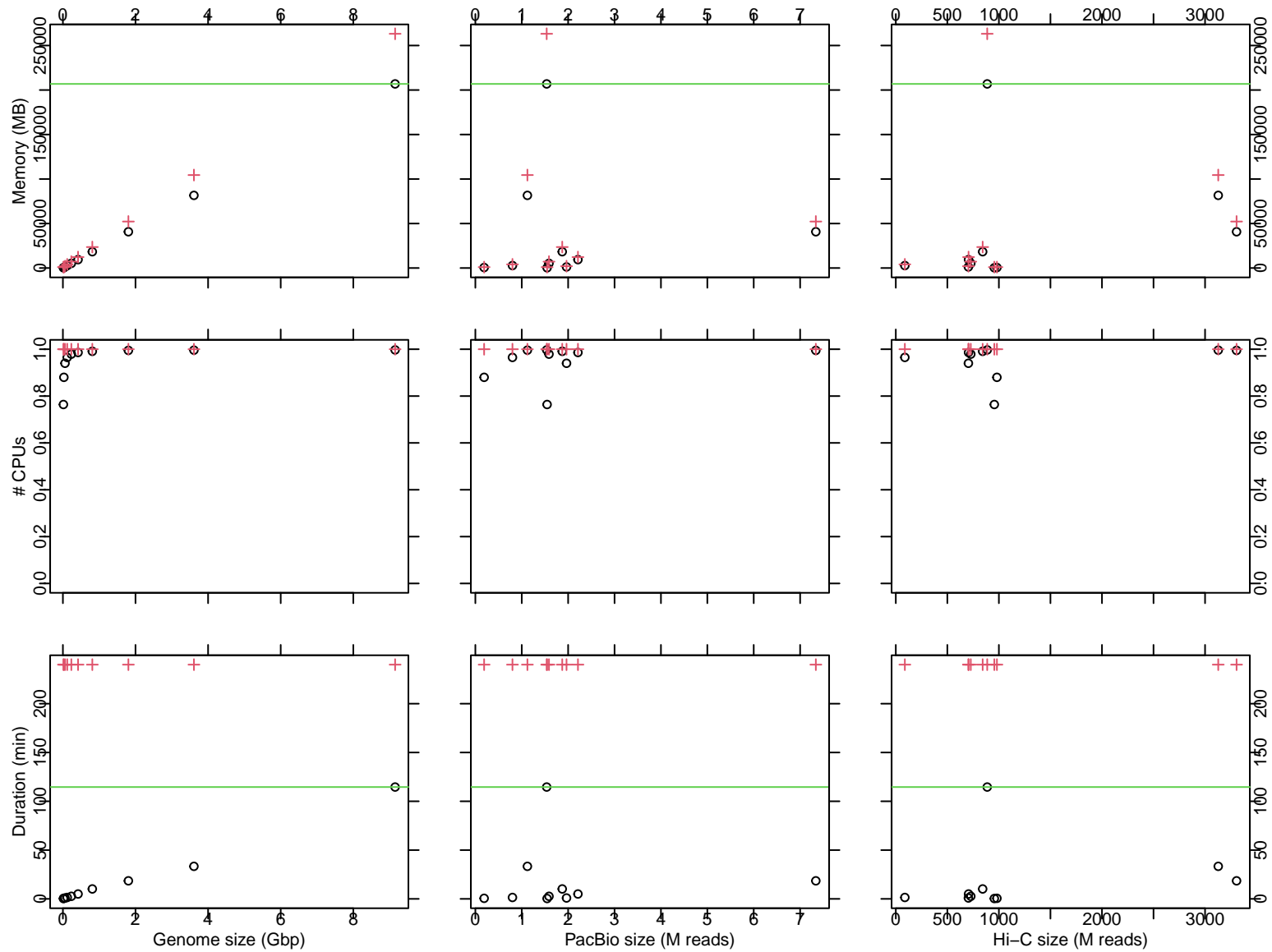
# CUSTOM\_DUMPSOFTWAREVERSIONS



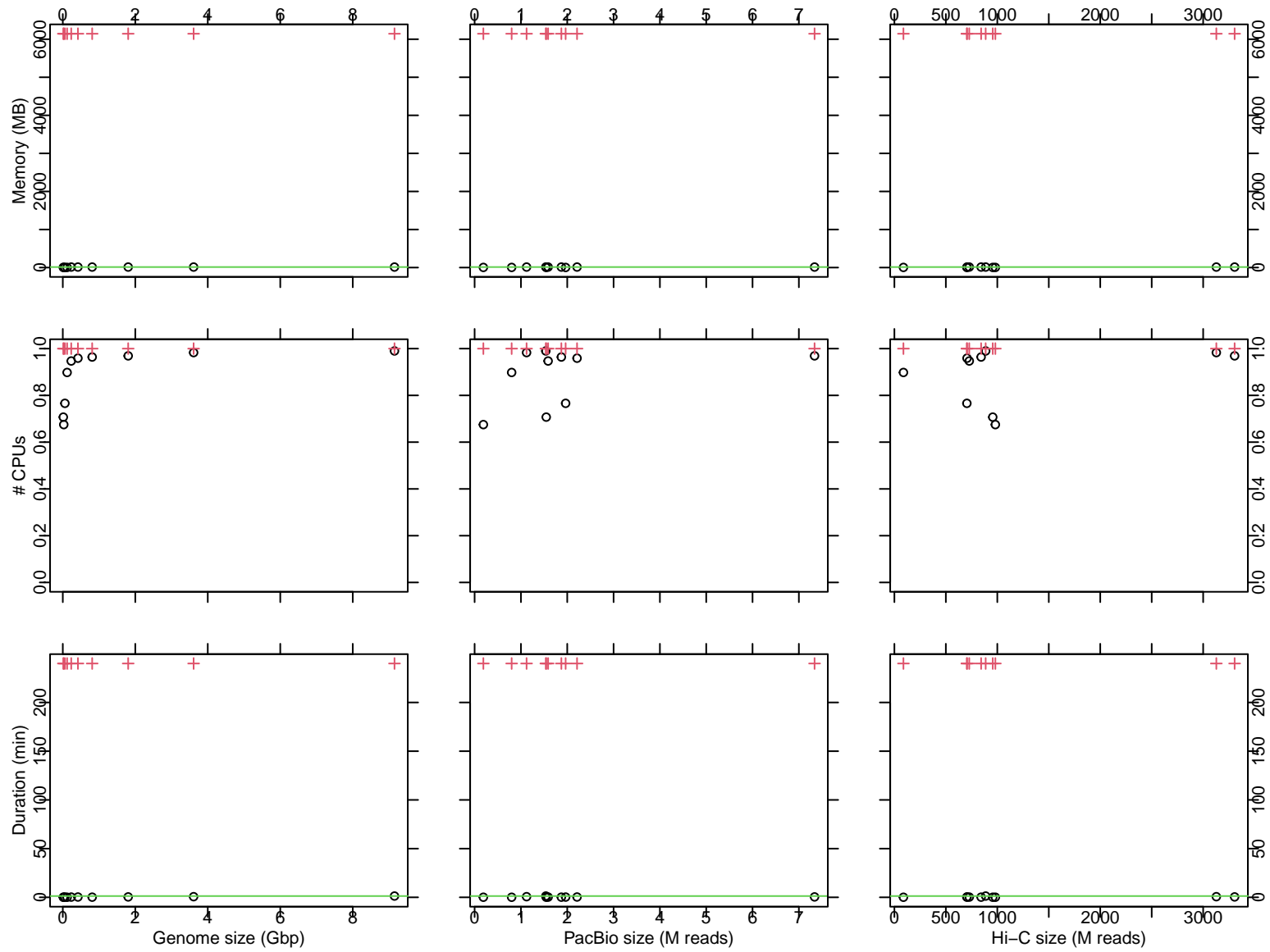
# INPUT\_CHECK:SAMPLESHEET\_CHECK



# PREPARE\_GENOME:BWAMEM2\_INDEX



# PREPARE\_GENOME:UNMASK





# UNTAR

