

## SUMMARY STATISTICS

R

CHECK ALL SNPS HAVE SAME NO. OF FIELDS  
ADD POSITIONS (IMPUTE RANGE GENERATION)  
CORRECT / ALIGN / EXCLUDE IF NOT  
CORRECT ALL NUMBERS IN a-e-b FORMAT  
CHECK FOR MISSINGNESS

some can lack CHR & BP:  
in this case, either MySQL  
query them or exclude

force R to avoid  
scientific notation

R

GENERATE IMPUTE RANGE ARRAY  
GENERATE A SCRIPT FOR ARRAY JOB

R

RENAME THE COLUMNS INTO SSIMP-FORMAT  
ADD THE N COLUMN, IF NOT THERE / RENAME  
REMOVE THE POSITIONS

MOVE TO THE SERVER

MOVE  
TO THE  
SERVER

bash

bash

## SSIMP

bash / R

CONCATENATE THE FILES  
FILTER BY IMPUTATION QUAL  
REMOVE DUPLICATES  
RENAME / ALIGN COLUMNS TO STANDARD

R

REPLACE REIMPUTED GWAS VALUES  
WITH ORIGINAL  
MAKE MIAMI PLOT, QQ, LZ