

Subhap is composed of three quick add-ons programs of Phase (<http://www.stat.washington.edu/stephens/software.html>) to compute subhaplotypes.

The first "**Subhapdata**" assesses which subhaplotyping method to use according to the level of missing information from genotypes dataset.

The second "**Subhap**" computes subhaplotypes according to the global method.

The third "**Subhapcombi**" computes subhaplotypes according to combination method based on the distribution of missing information.

PS: All information about Phase software and Phase file formats are available on: <http://www.stat.washington.edu/stephens/instruct2.1.pdf>

Common input files:

- *SNPs_list_file*: list of the SNP index numbers (seperated by comma) composing subhaplotypes.
 - *Phase_input_file*: The same input format as Phase software.
- Note: options or files between [] are optional.

1) Subhapdata (Missing Data)

Usage:

- *subhapdata SNPs_list_file Phase_input_file*

2) Subhap (Global Method)

Input files:

- *outphase_freqs_file* and *outphase_file_pairs*: Output file given by phase software when all SNPs are haplotyped.
- *outsubhap_freq_file* and *outsubhap_file_pairs*: output subhap file names.

Option:

- [-c] [cutoff(%)] to use cutoff method.
- [-phase] to use Phase software

Usage:

- *subhap SNPs_list_file outphase_freqs_file outsubhap_freq_file [outphase_file_pairs] [outsubhap_file_pairs]*

3) Subhapcombi (Combination method)

Input files:

- *outphase_file_pairs_Global* and *outphase_file_pairs_Direct*: Output file given by phase software when all SNPs are haplotyped (Global) or only SNP include in subhaplotypes (Direct).
- *outsubhapcombi_file_pairs*: output subhapcombi file names.

Option:

- [-c] [cutoff(%)] to use cutoff method.
- [-phase] to use Phase software

Usage:

- *Subhapcombi [options] SNPs_list_file Phase_input_file outphase_file_pairs_Global outphase_file_pairs_Direct outsubhapcombi_file_pairs*

NOTE: For using -phase option you have to dowload phase software and copy executable file on Phase directory.

Source Code: C