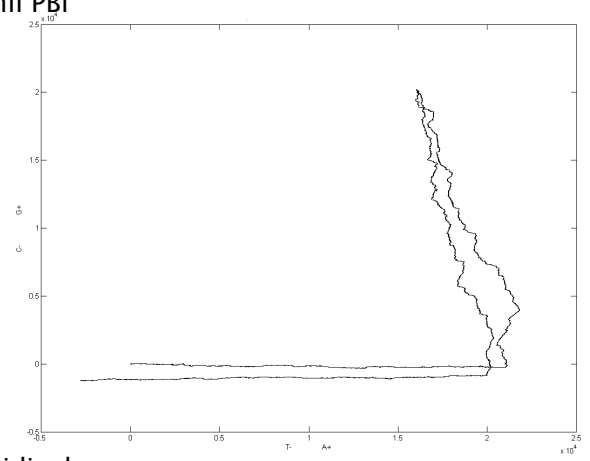
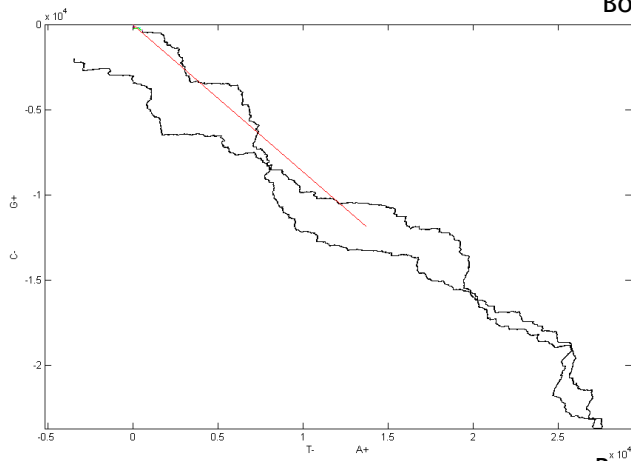
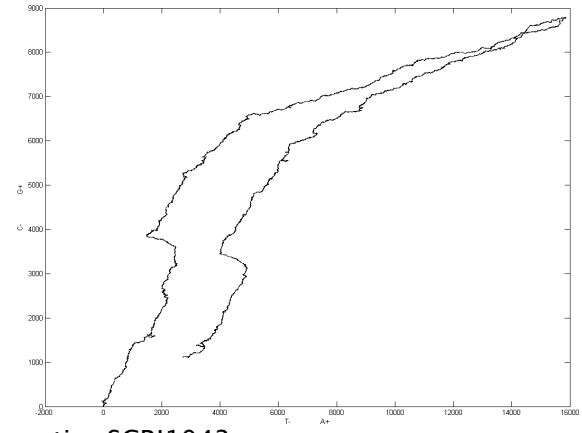
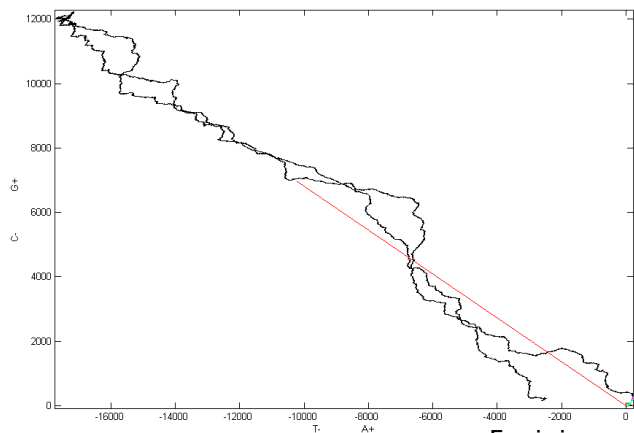
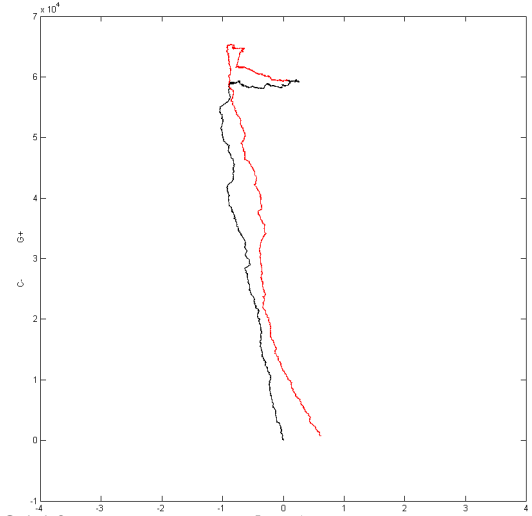
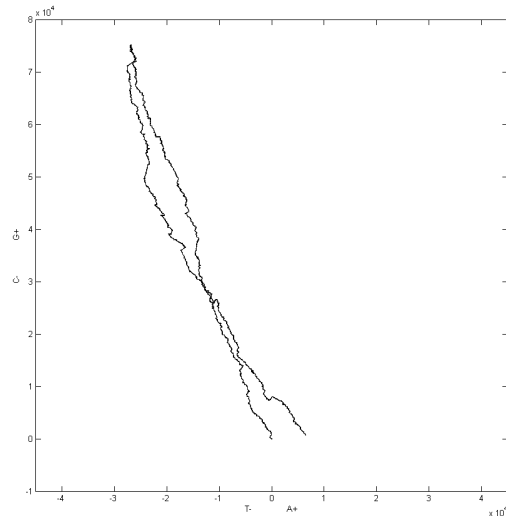
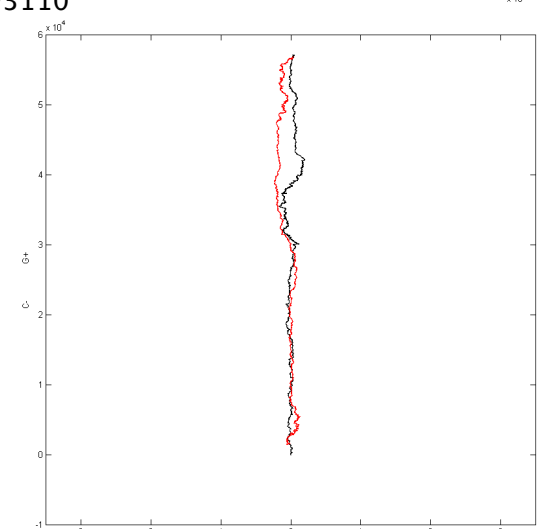
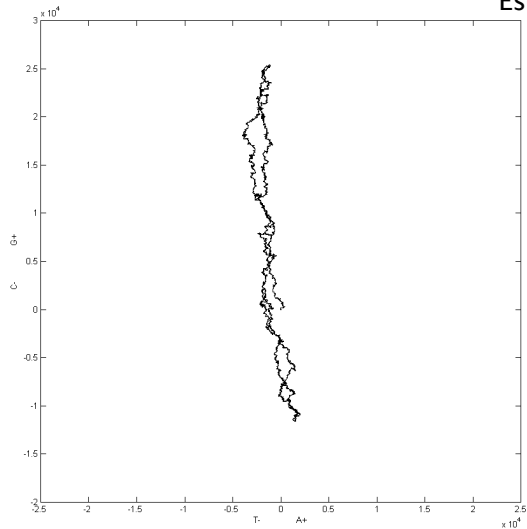


Supplementary Figure 1. Examples of chromosome 2D DNA walks before and after GSS transformation. Trajectories of the genes in the original order are shown on the left, GSS transformed trajectories are on the right. The figure occupies the next 16 pages. Presented are 12 chromosomes of bacteria, 4 chromosomes of archaea, 20 chromosomes of fungi and 24 chromosomes of humans.

whole chromosome

GSS transformation

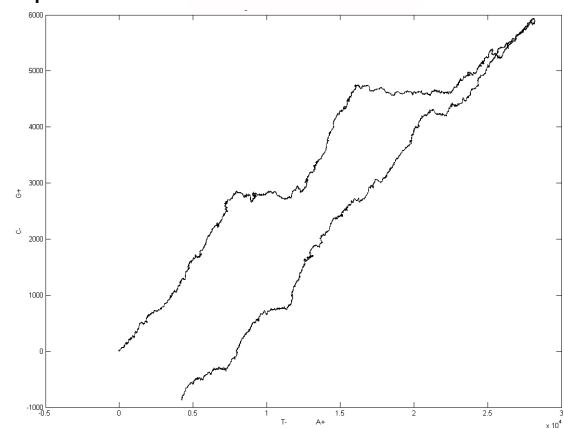
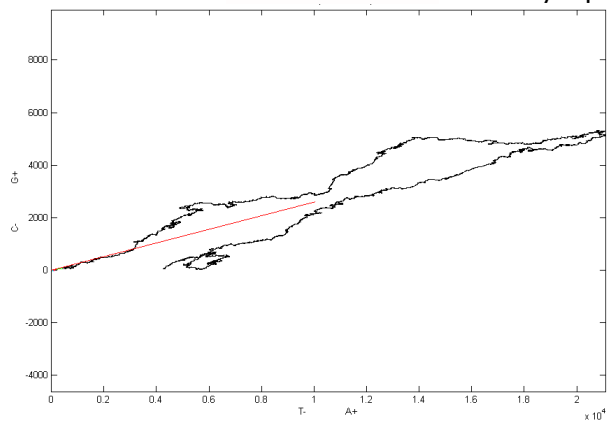
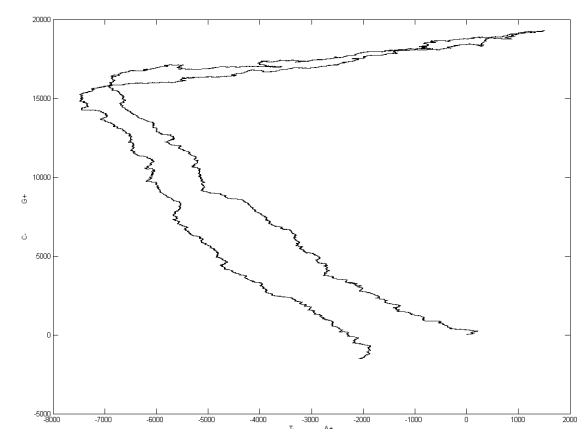
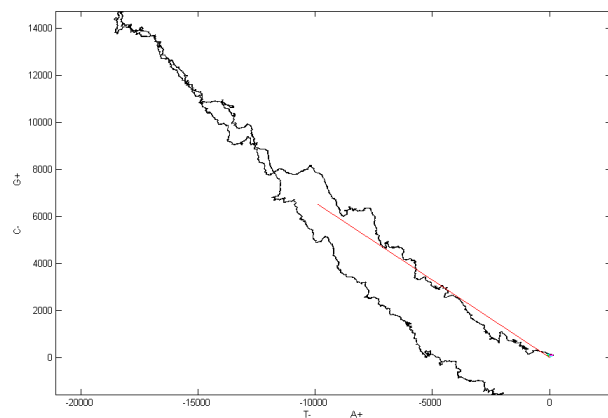
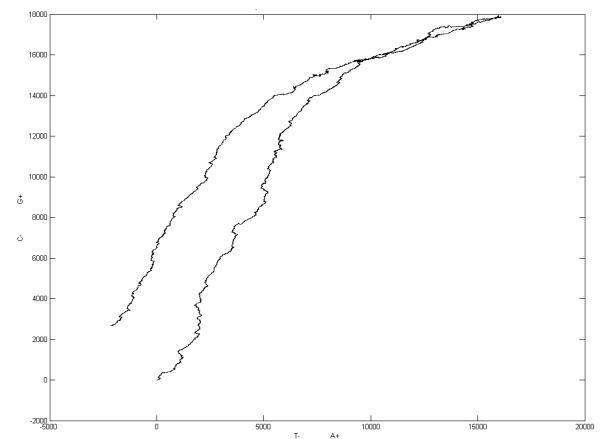
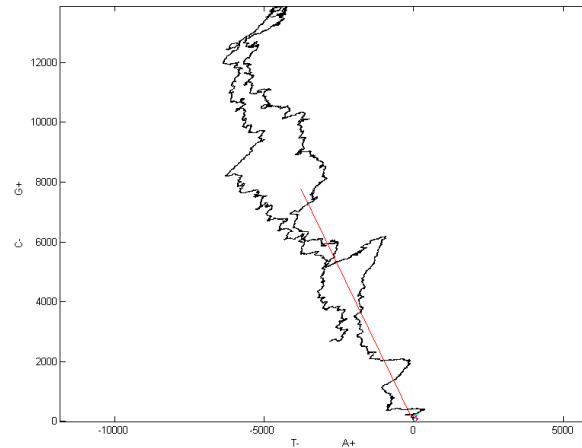
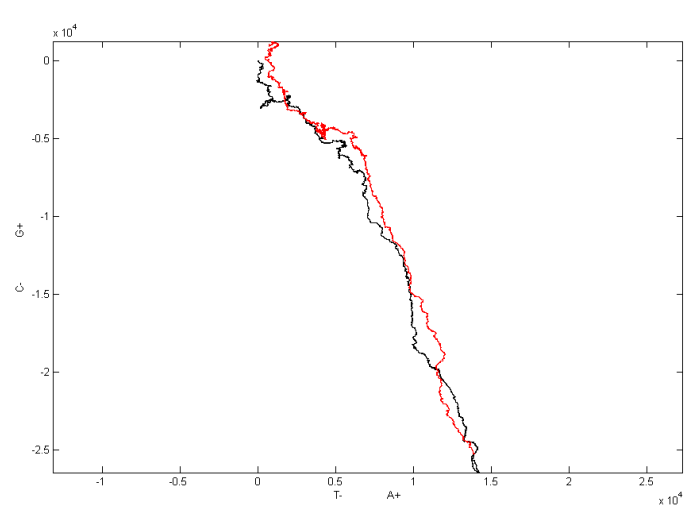
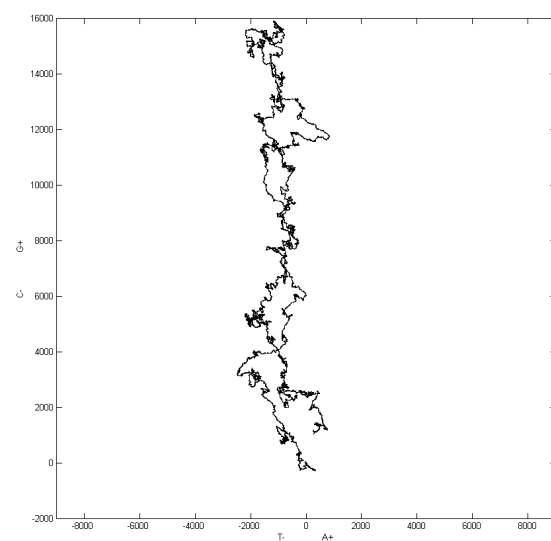
Borrelia garinii PBi*Buchnera aphidicola**Erwinia carotovora* atroseptica SCRI1043*Escherichia coli* W3110

BACTERIA

BACTERIA

whole chromosome

GSS transformation

Mycoplasma gallisepticum*Neorickettsia sennetsu* Miyayama*Rickettsia prowazekii**Thiobacillus denitrificans* ATCC 25259

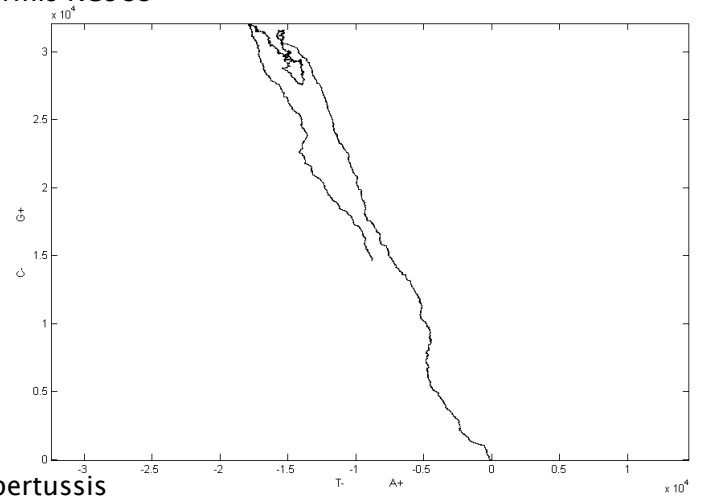
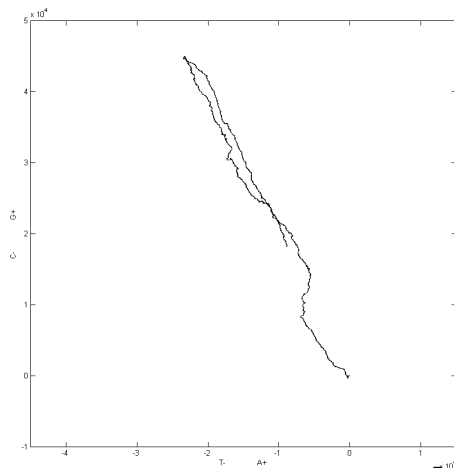
BACTERIA

BACTERIA

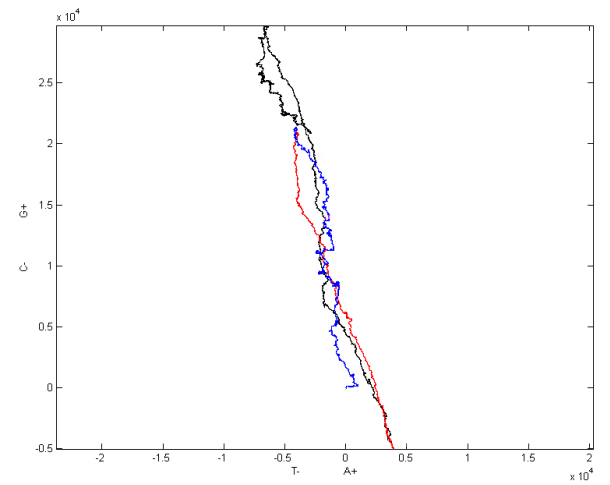
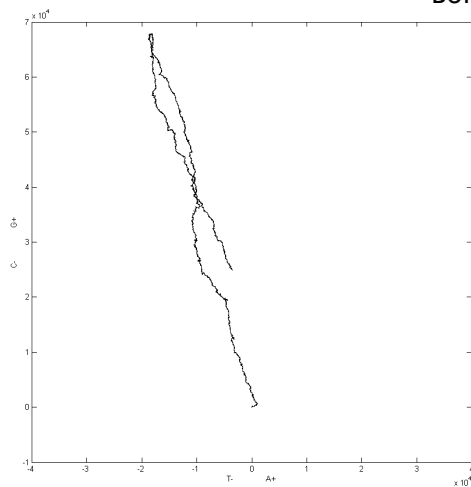
whole chromosome

GSS transformation

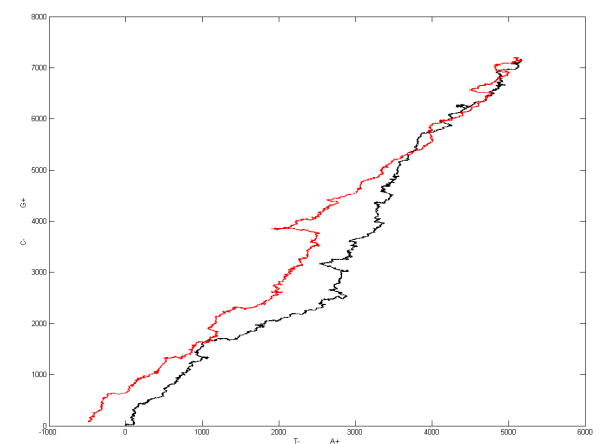
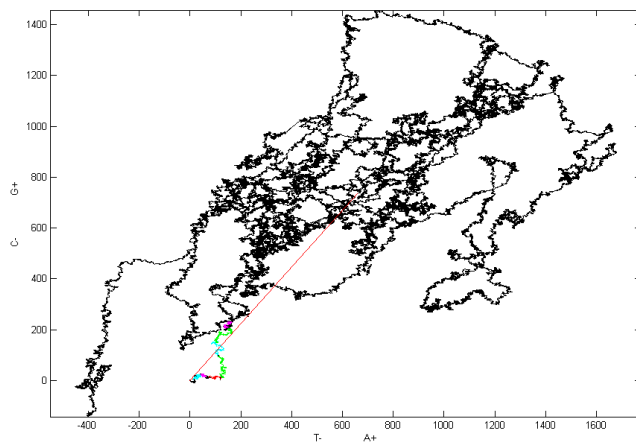
Bartonella bacilliformis KC583



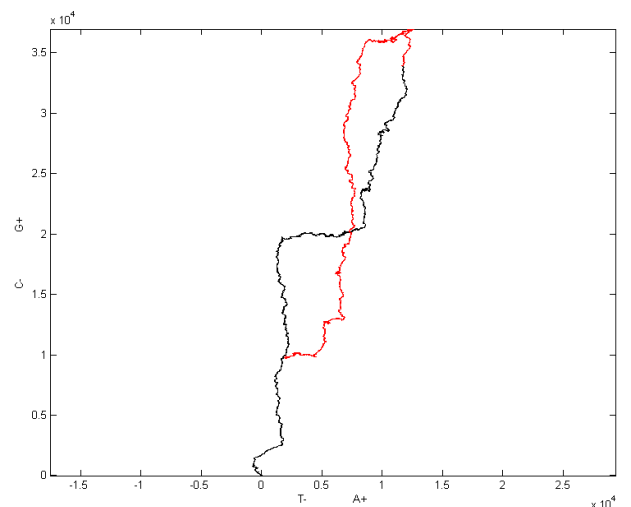
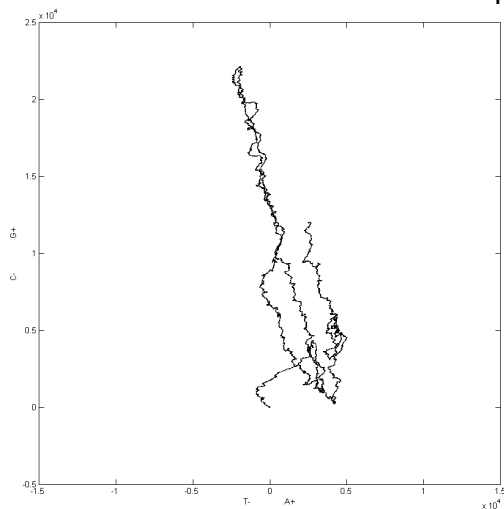
Bordetella parapertussis



Baumannia cicadellinicola



Pasteurella multocida



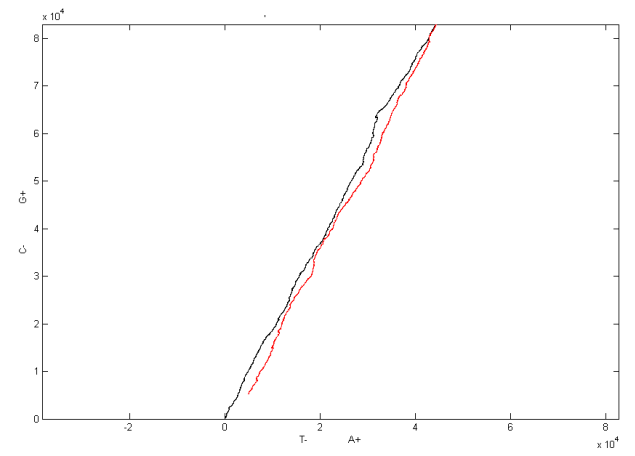
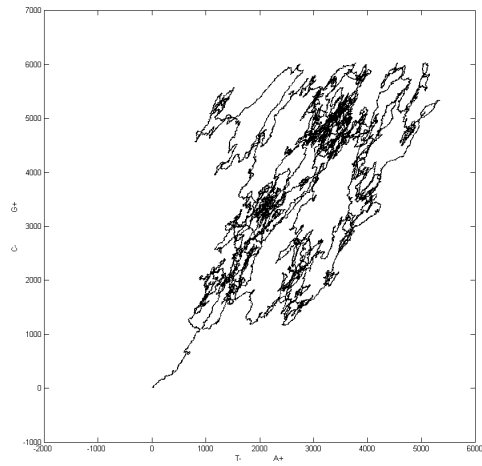
BACTERIA

BACTERIA

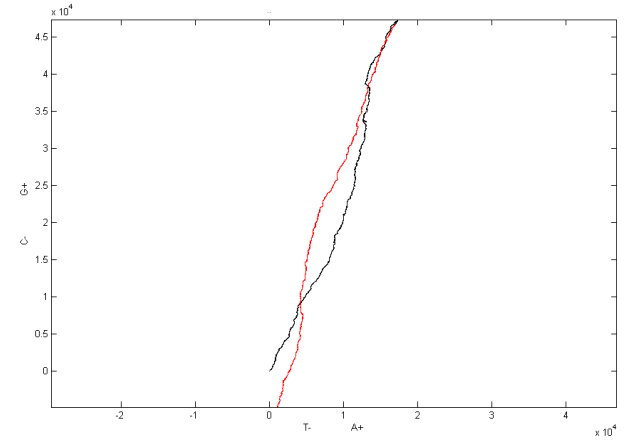
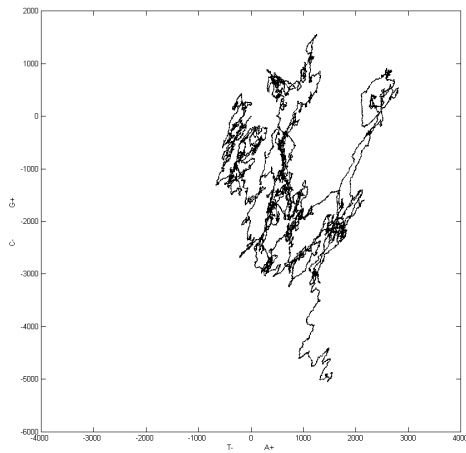
whole chromosome

GSS transformation

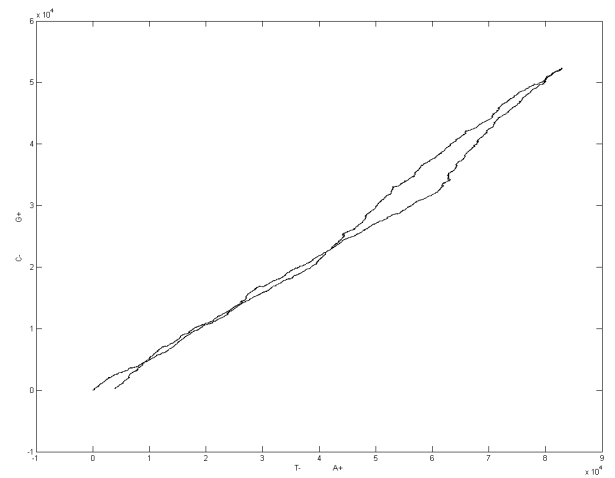
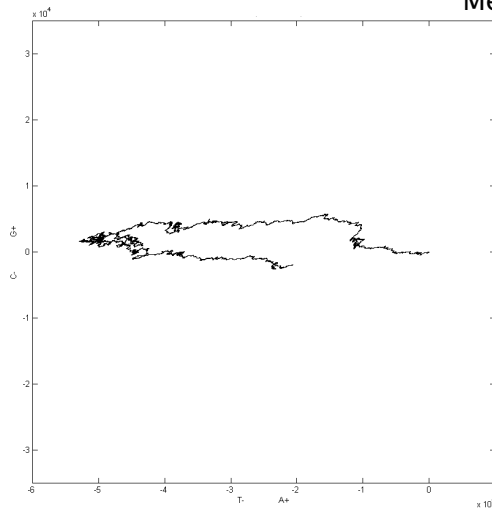
Archaeoglobus fulgidus



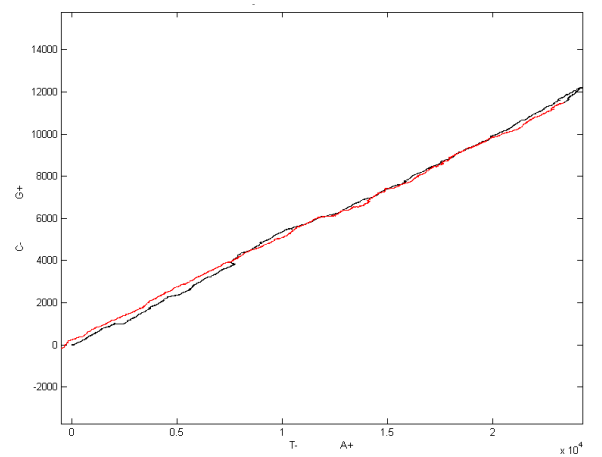
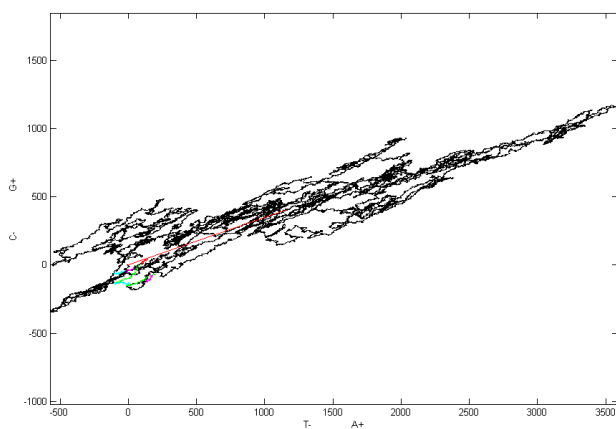
Methanopyrus kandleri



Methanosarcina acetivorans



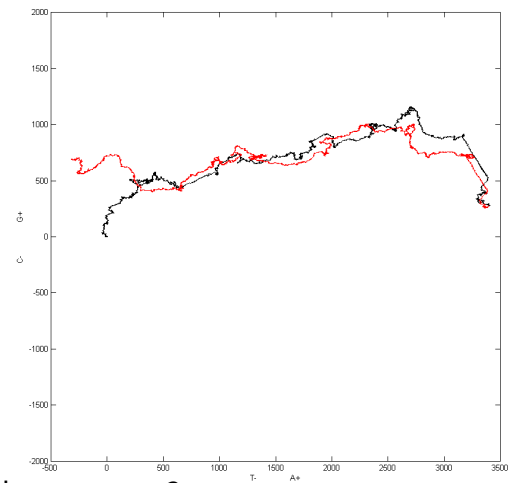
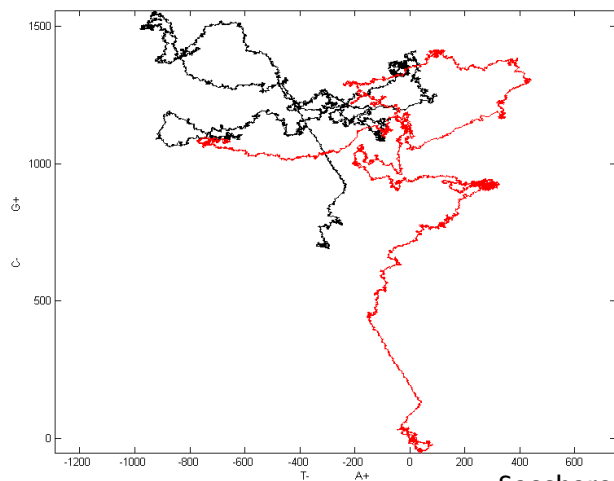
Nanoarchaeum equitans



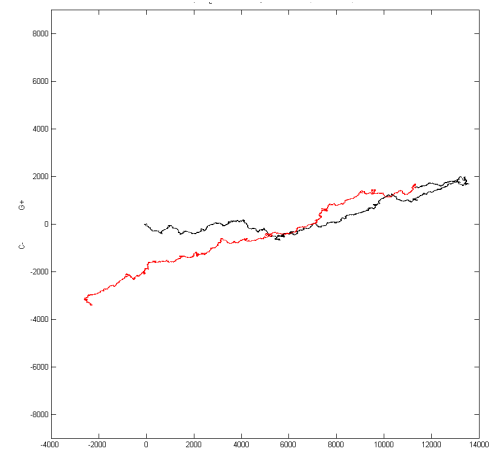
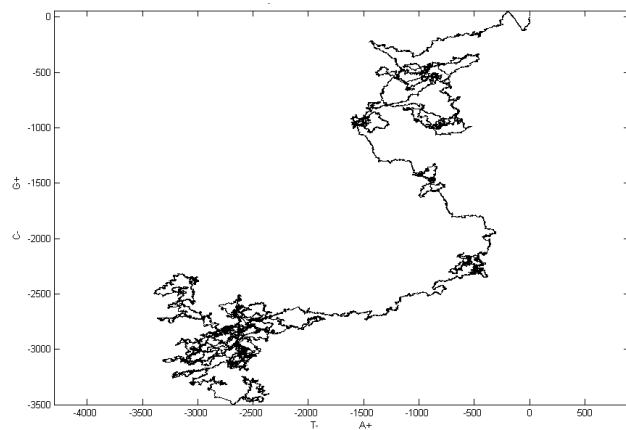
ARCHAEA

ARCHAEA

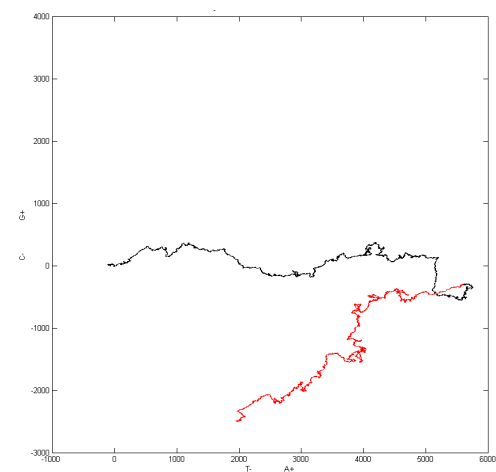
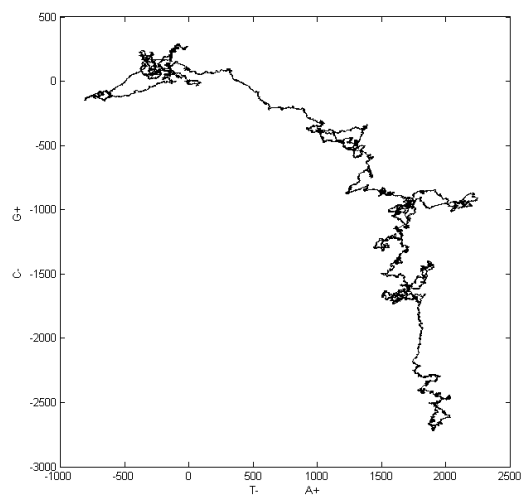
Saccharomyces cerevisiae, chromosome 1



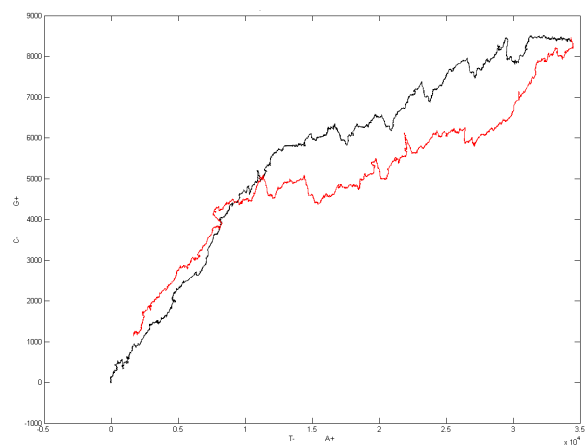
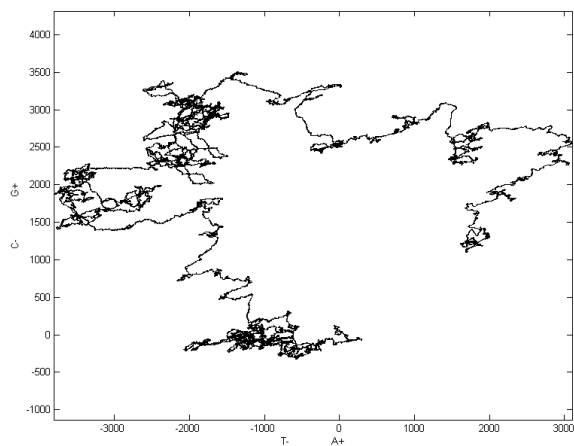
Saccharomyces cerevisiae, chromosome 2



Saccharomyces cerevisiae, chromosome 3



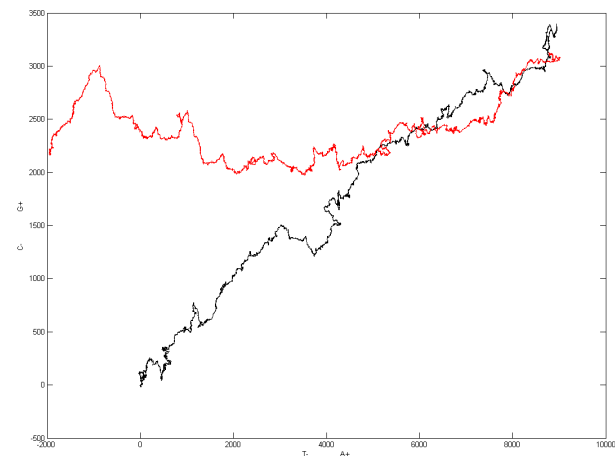
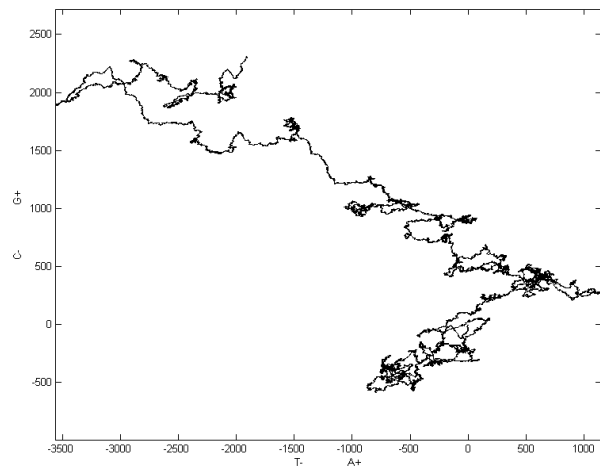
Saccharomyces cerevisiae, chromosome 4



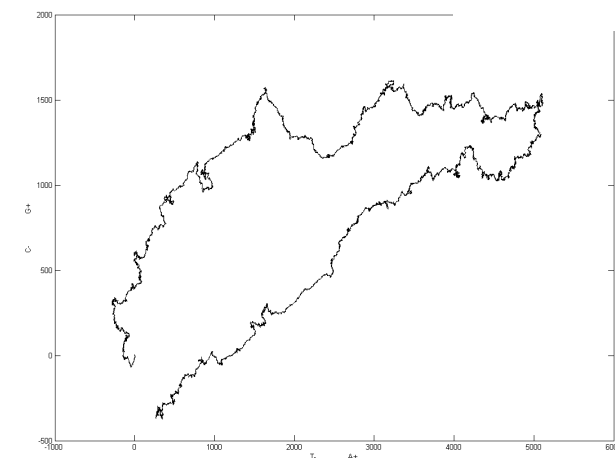
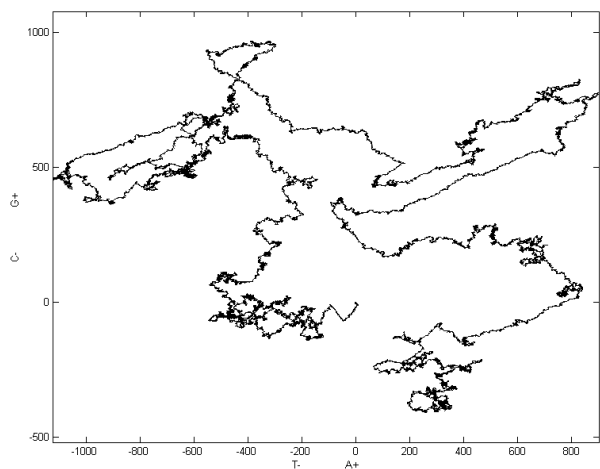
Genes only

GSS transformation

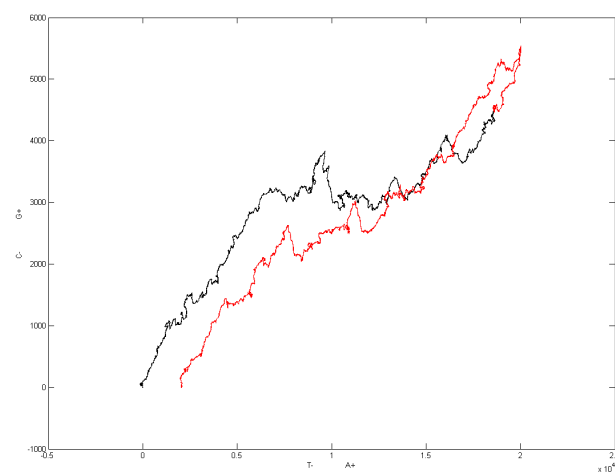
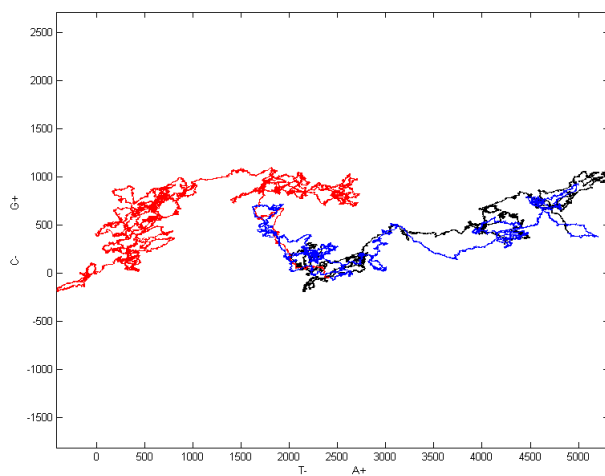
Saccharomyces cerevisiae, chromosome 5



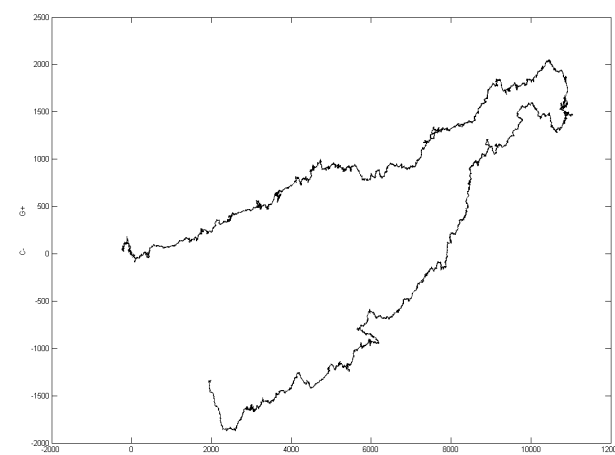
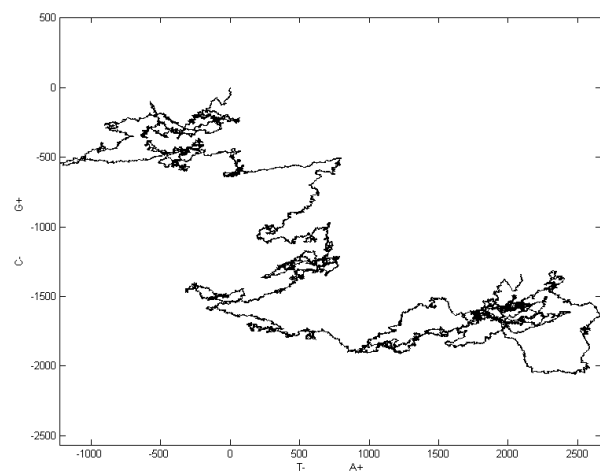
Saccharomyces cerevisiae, chromosome 6



Saccharomyces cerevisiae, chromosome 7



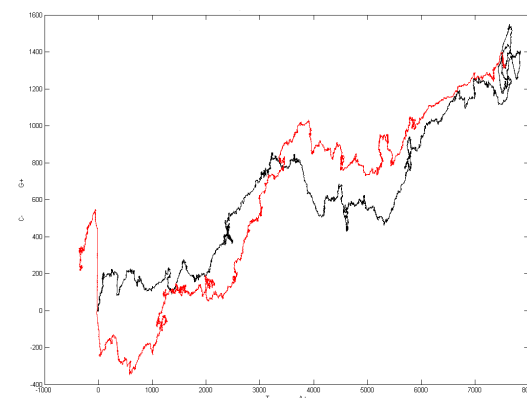
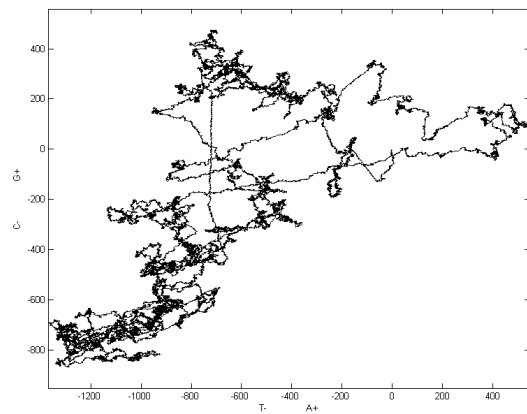
Saccharomyces cerevisiae, chromosome 8



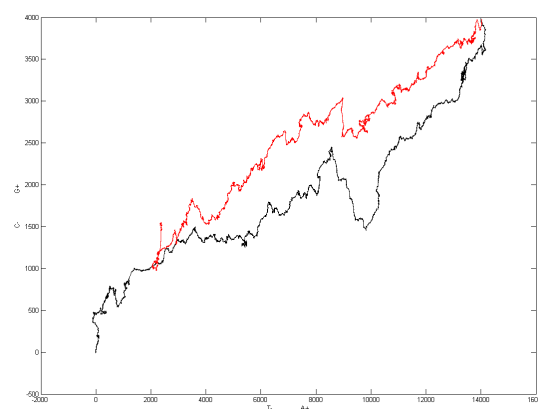
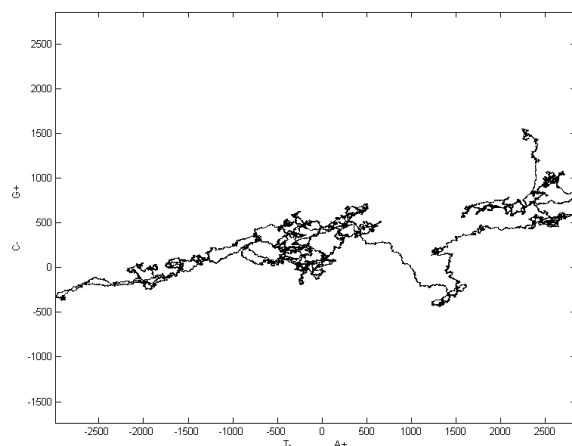
FUNGI

FUNGI

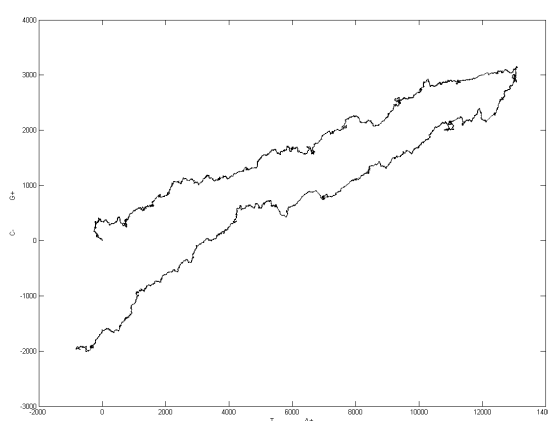
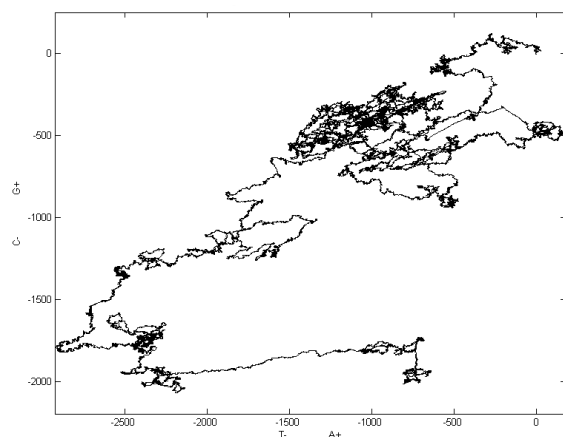
Saccharomyces cerevisiae, chromosome 9



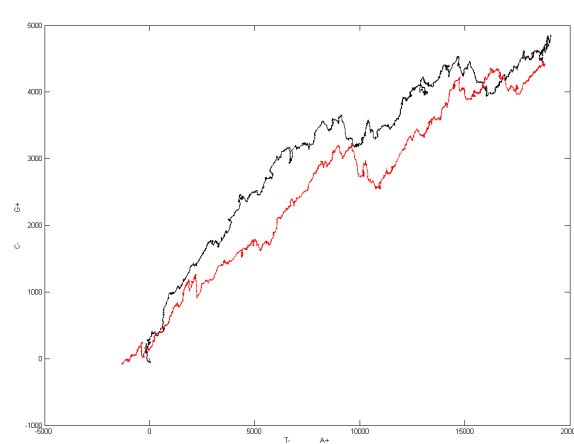
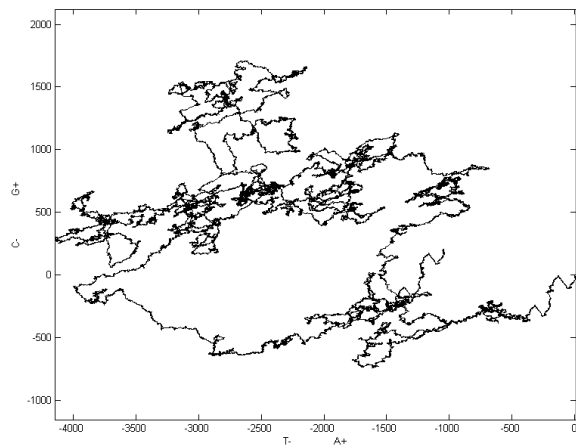
Saccharomyces cerevisiae, chromosome 10



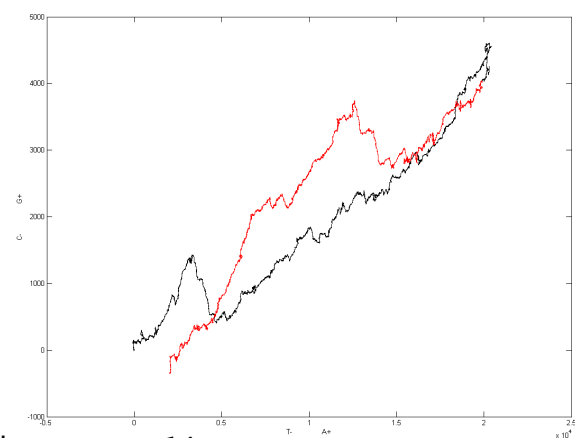
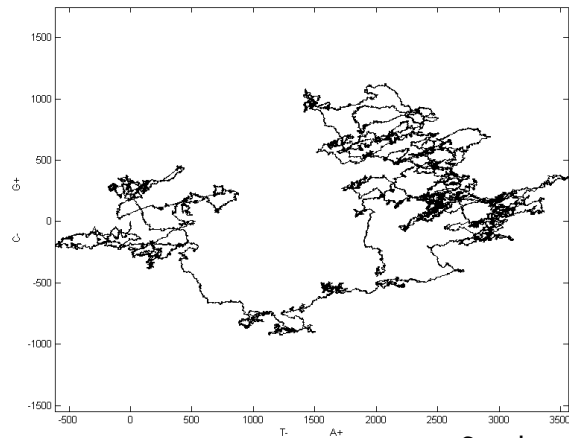
Saccharomyces cerevisiae, chromosome 11



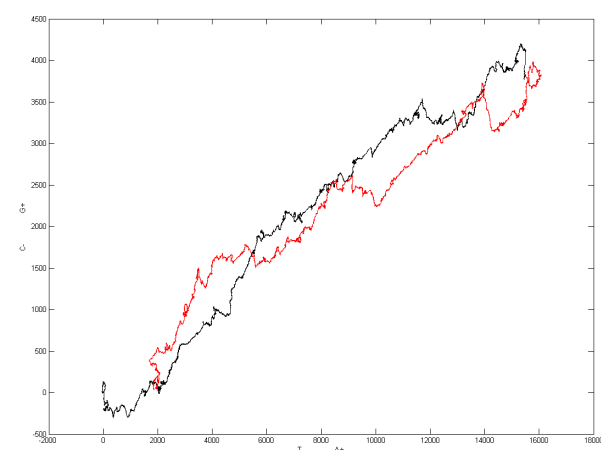
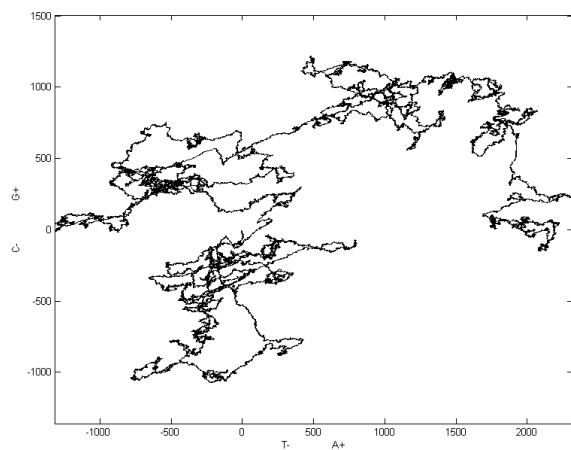
Saccharomyces cerevisiae, chromosome 12



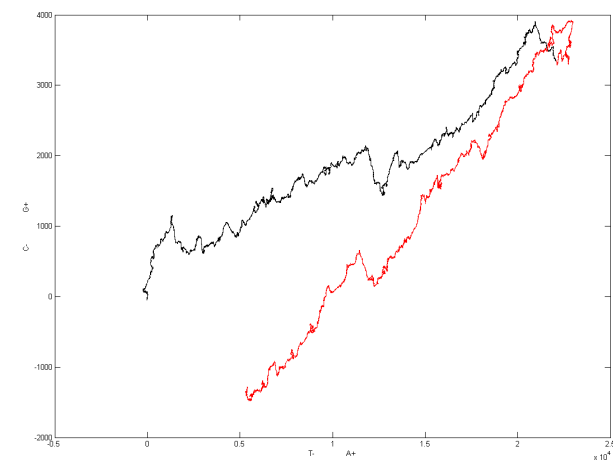
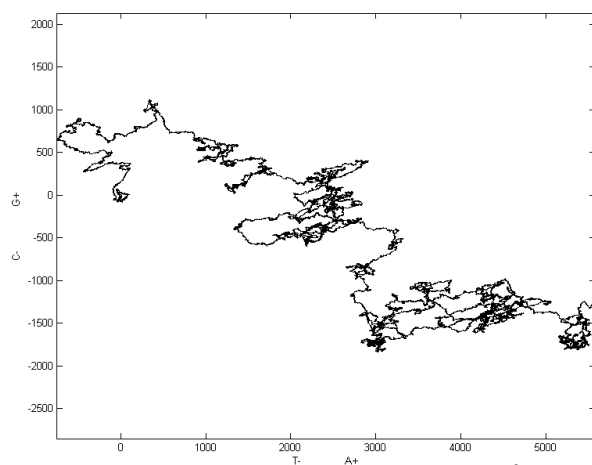
Saccharomyces cerevisiae, chromosome 13



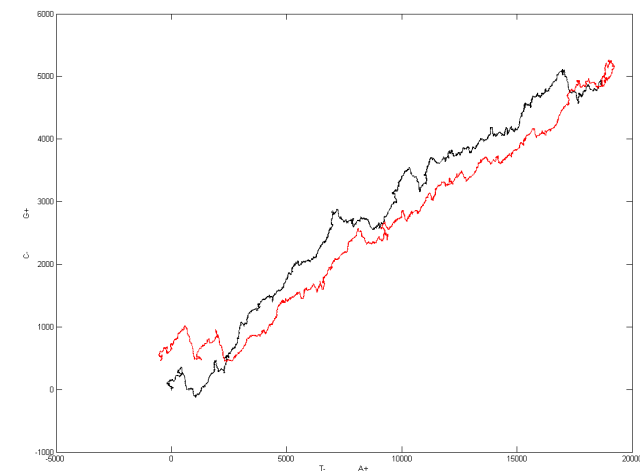
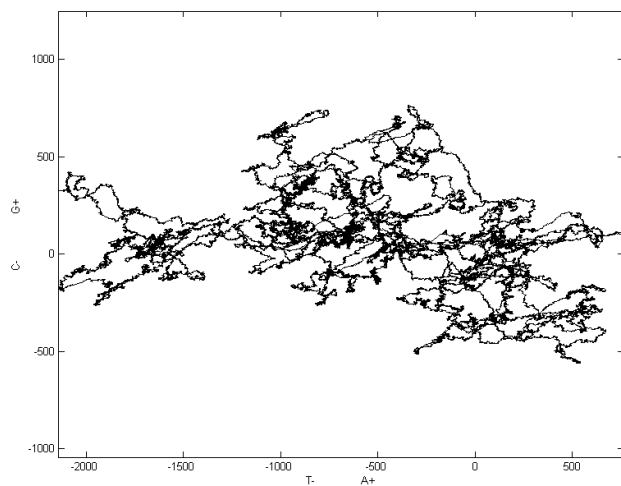
Saccharomyces cerevisiae, chromosome 14



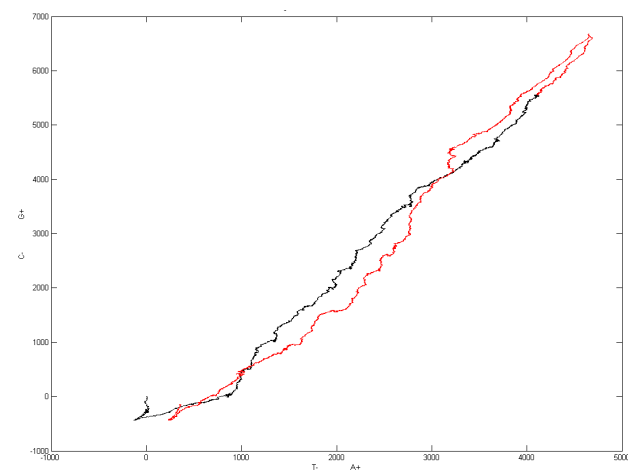
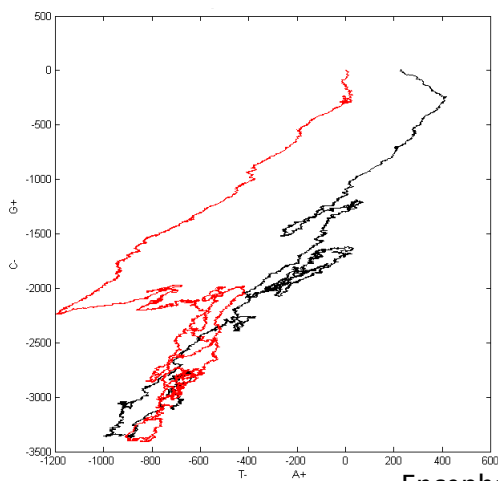
Saccharomyces cerevisiae, chromosome 15



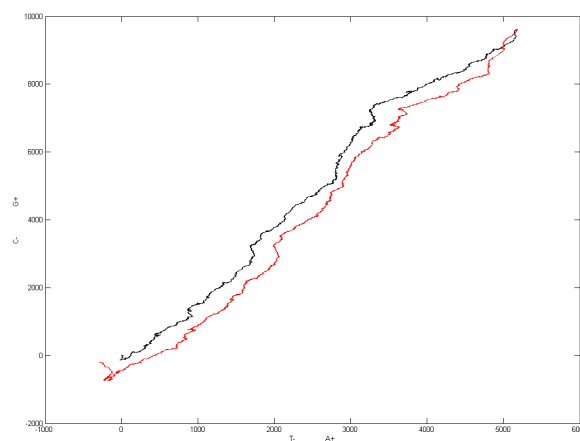
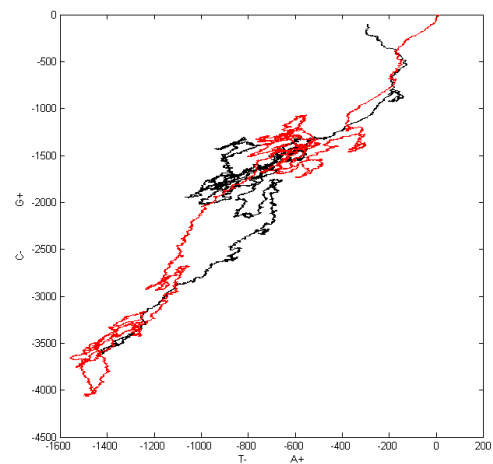
Saccharomyces cerevisiae, chromosome 16



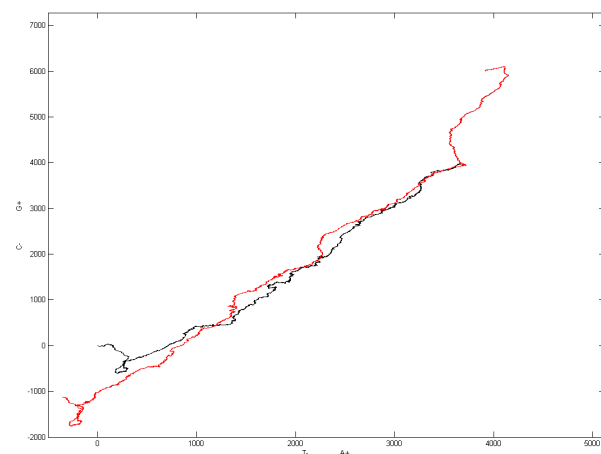
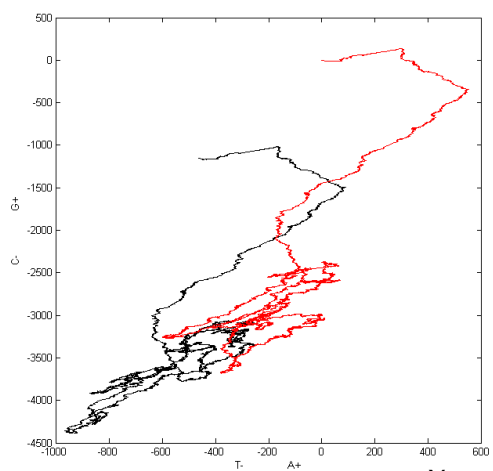
Encephalitozoon cuniculi, chromosome 1



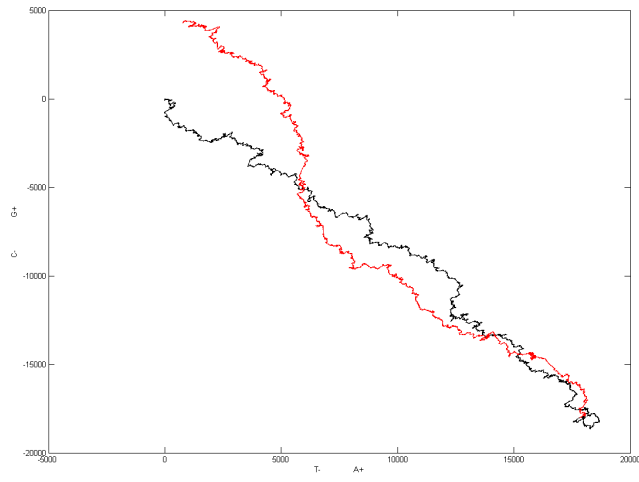
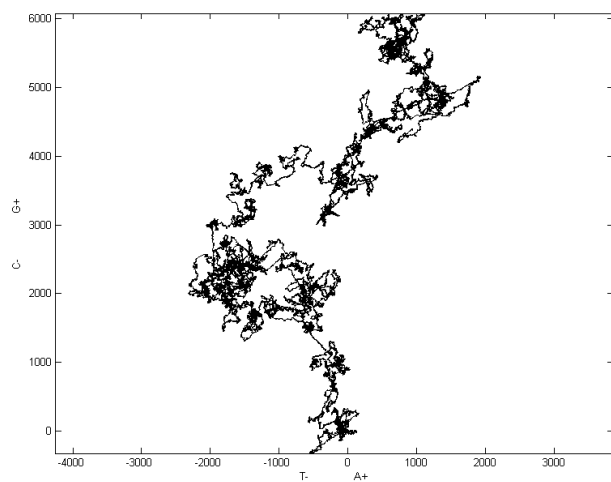
Encephalitozoon cuniculi, chromosome 8



Encephalitozoon cuniculi, chromosome 11



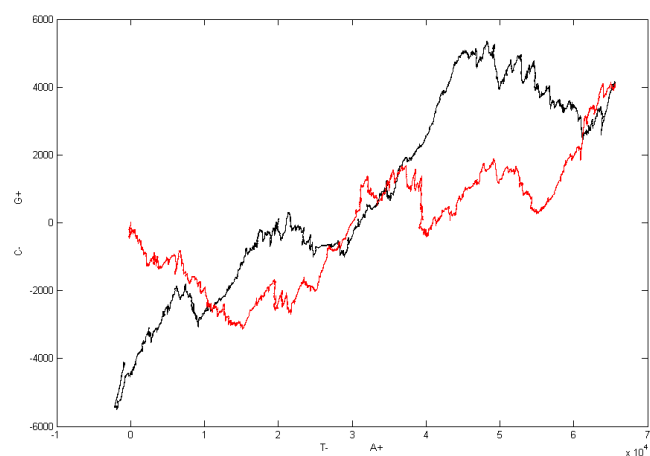
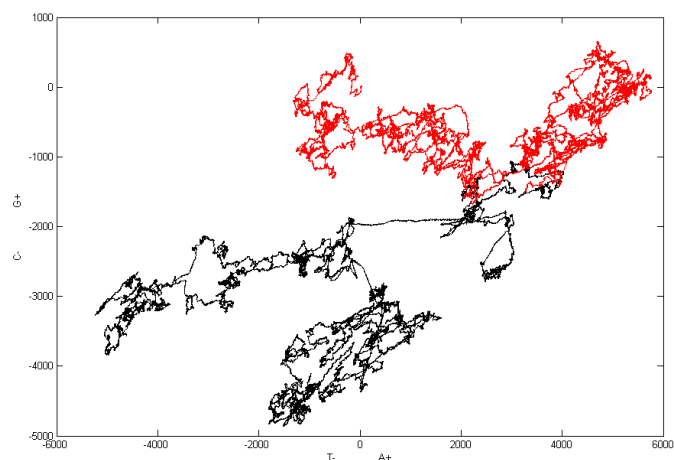
Yarrowia lipolytica, chromosome 7



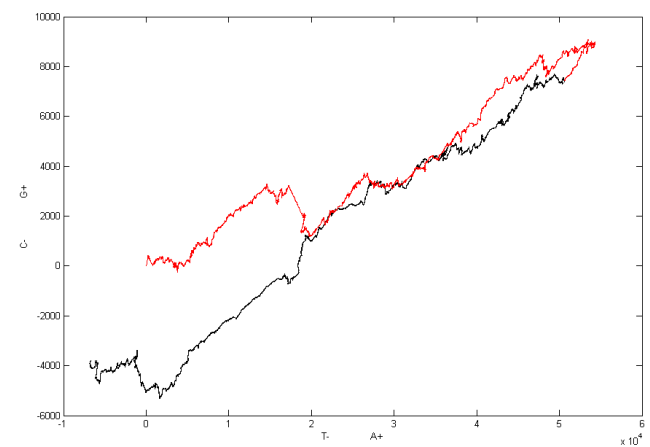
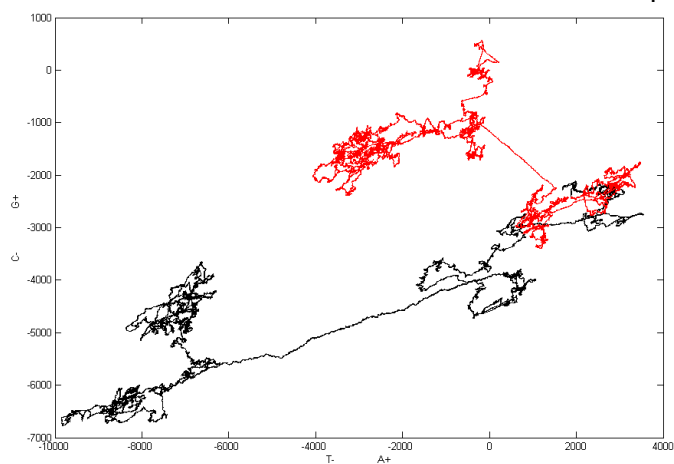
CDS only

GSS transformation

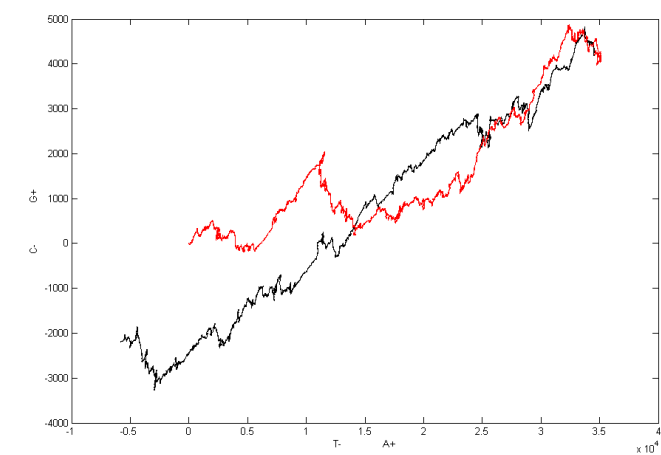
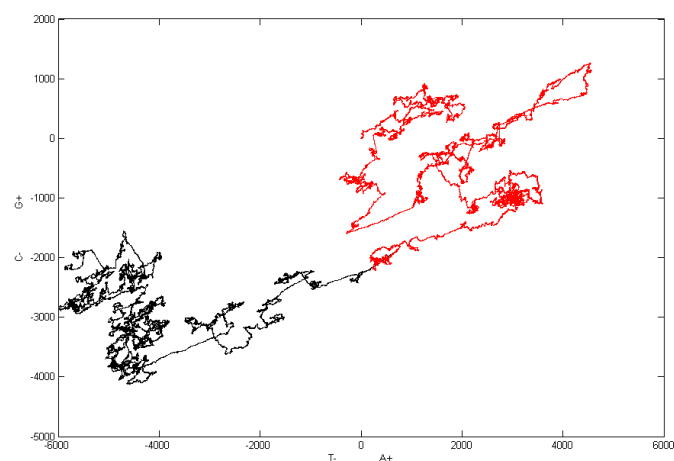
Homo sapiens, chromosome 1



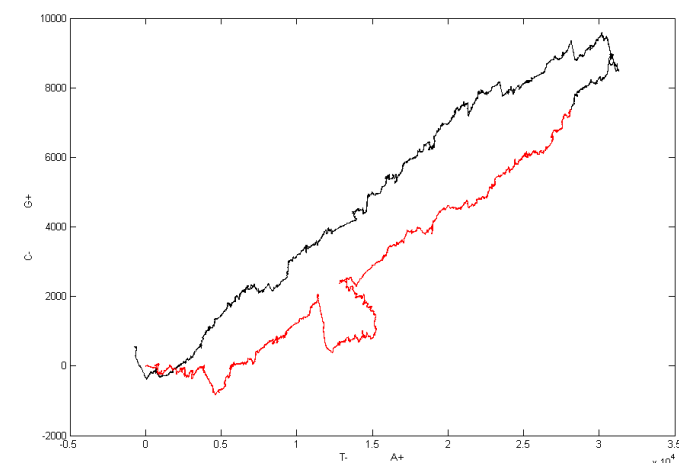
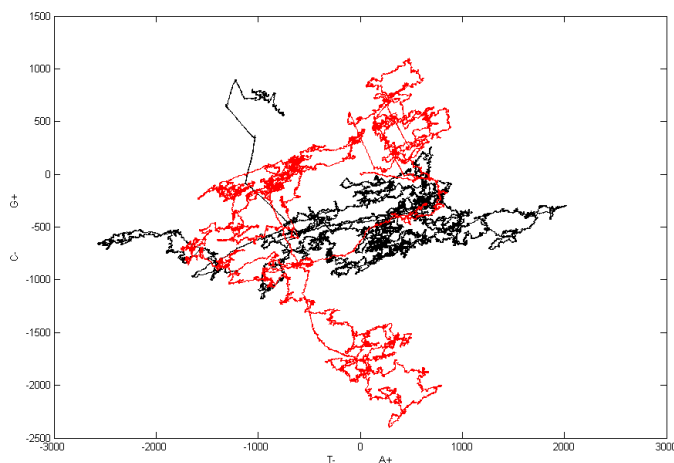
Homo sapiens, chromosome 2



Homo sapiens, chromosome 3



Homo sapiens, chromosome 4



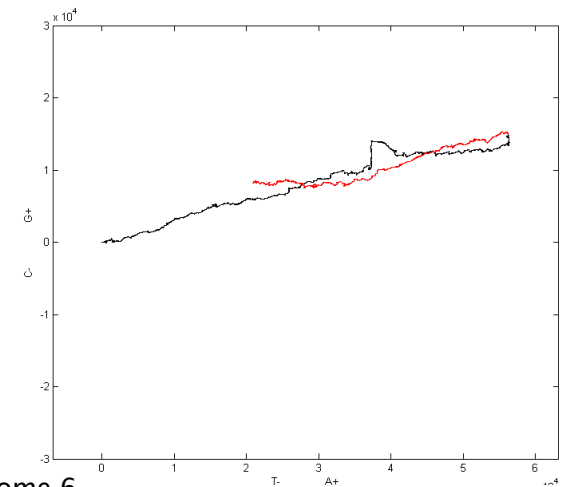
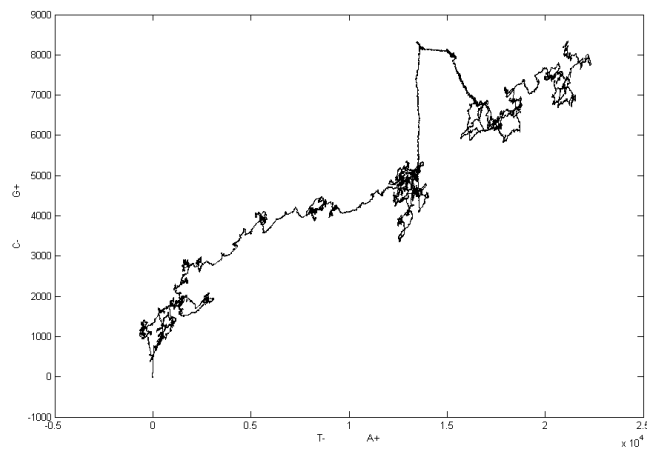
HUMAN

HUMAN

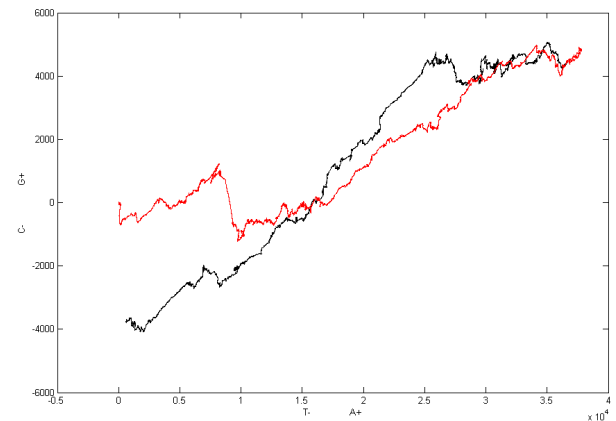
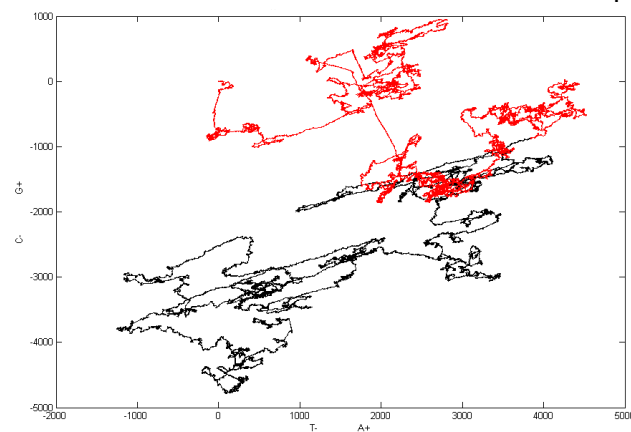
CDS only

GSS transformation

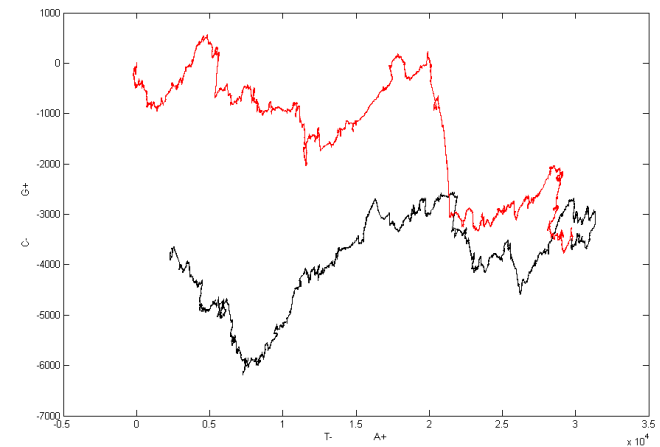
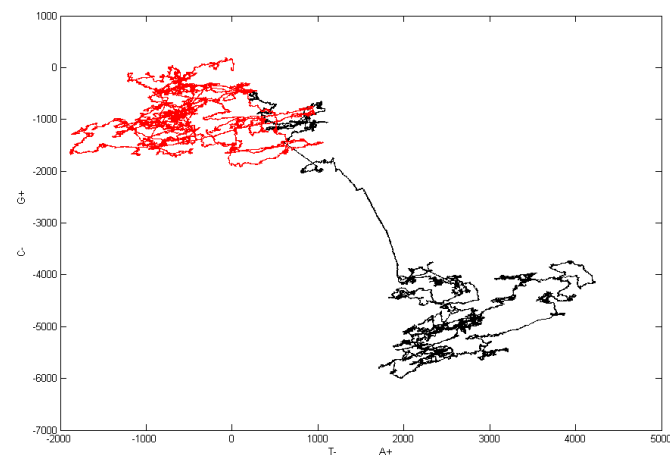
Homo sapiens, chromosome 5



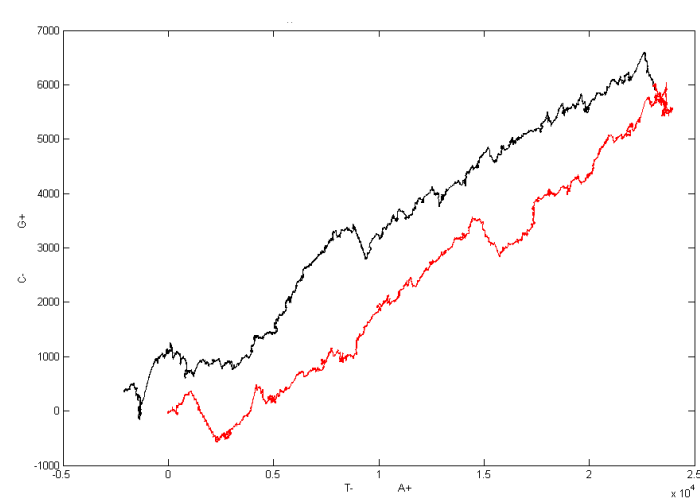
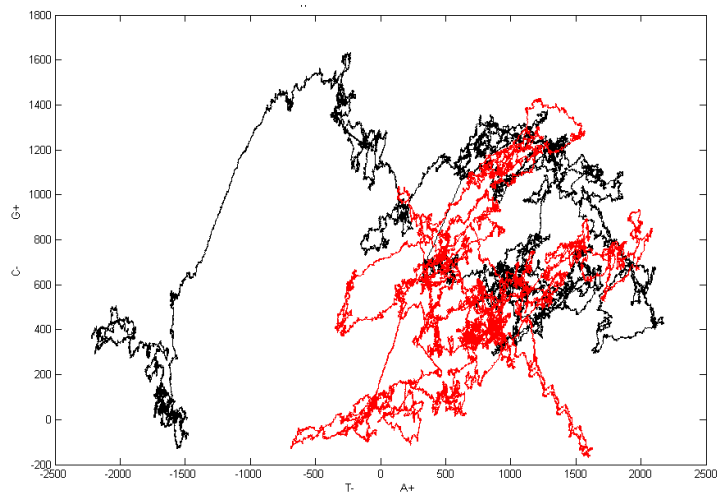
Homo sapiens, chromosome 6



Homo sapiens, chromosome 7



Homo sapiens, chromosome 8



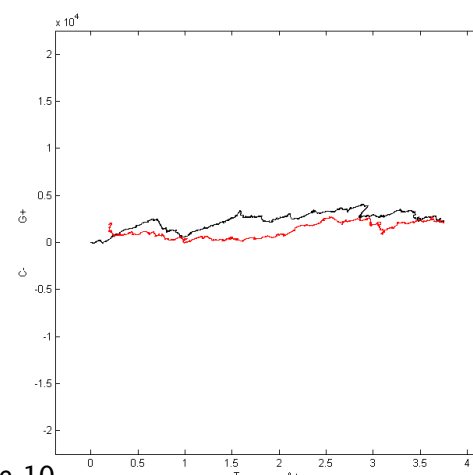
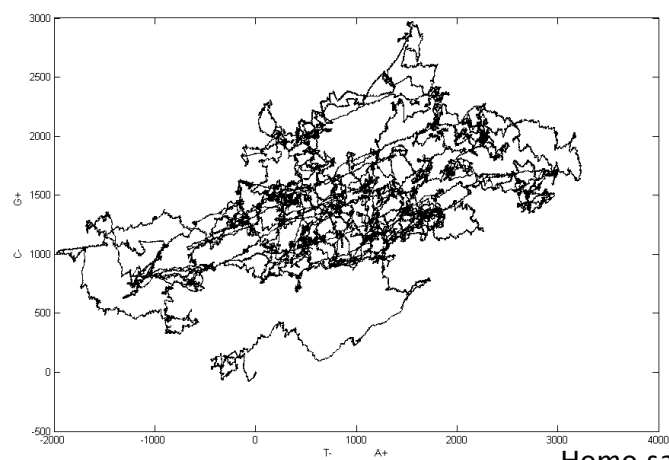
HUMAN

HUMAN

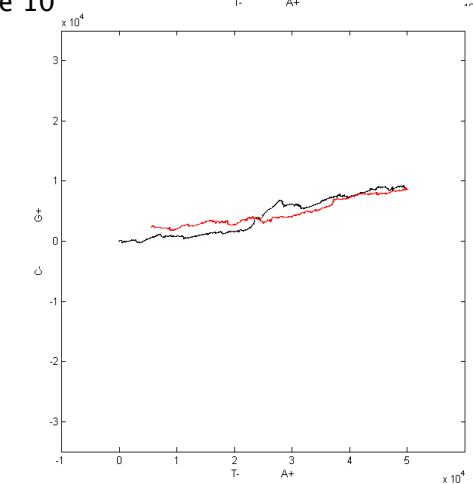
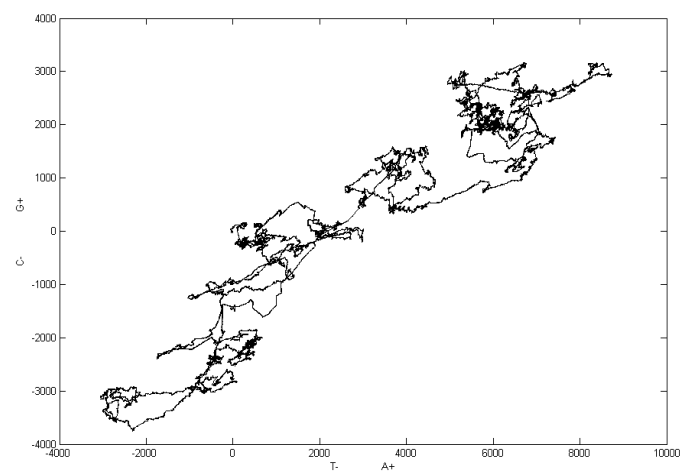
CDS only

GSS transformation

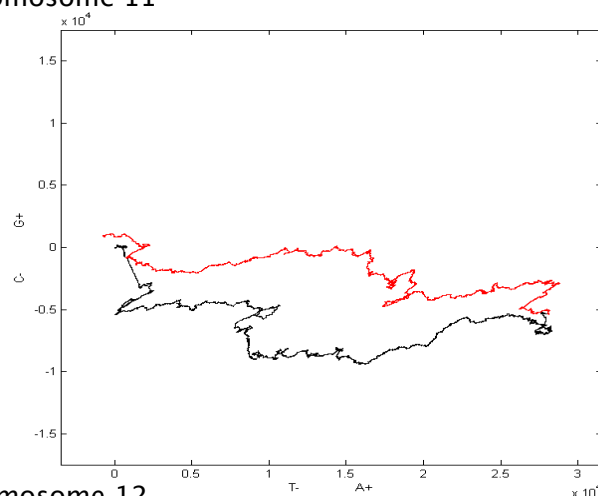
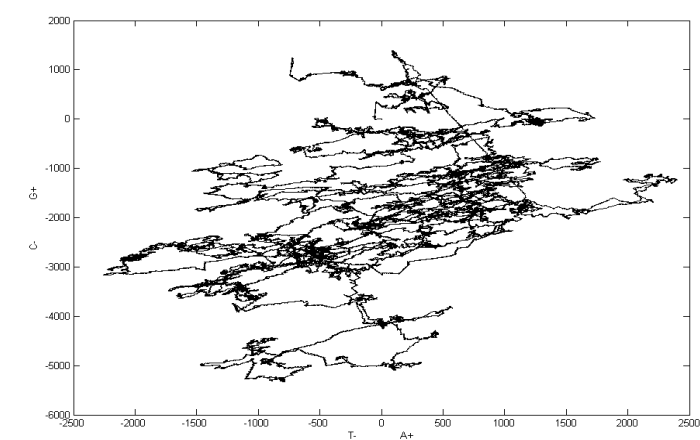
Homo sapiens, chromosome 9



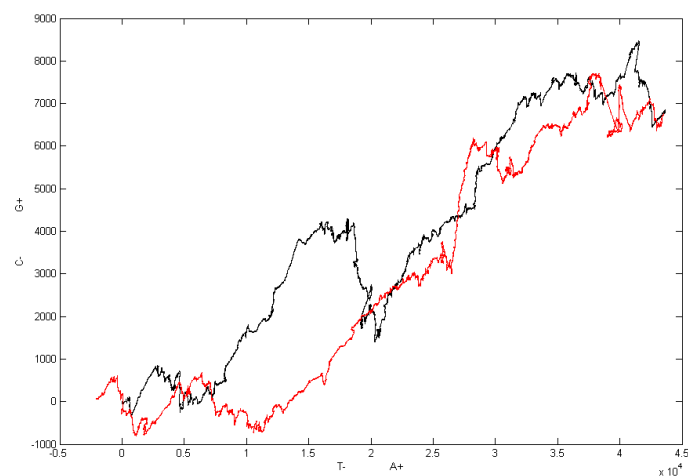
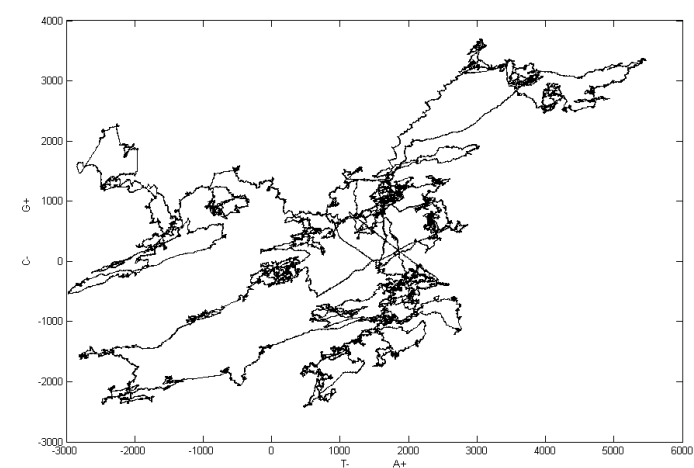
Homo sapiens, chromosome 10



Homo sapiens, chromosome 11



Homo sapiens, chromosome 12



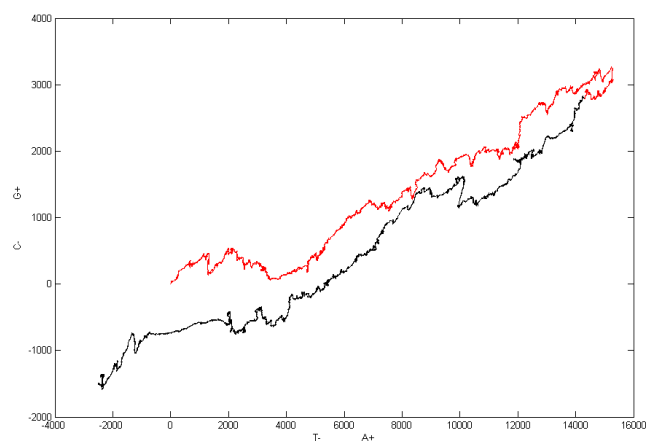
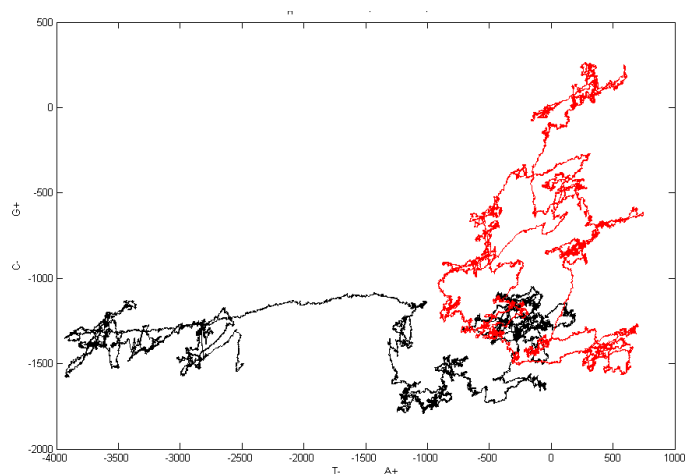
HUMAN

HUMAN

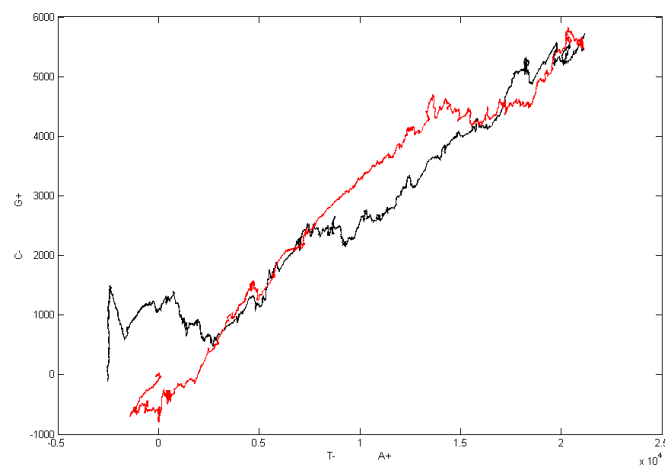
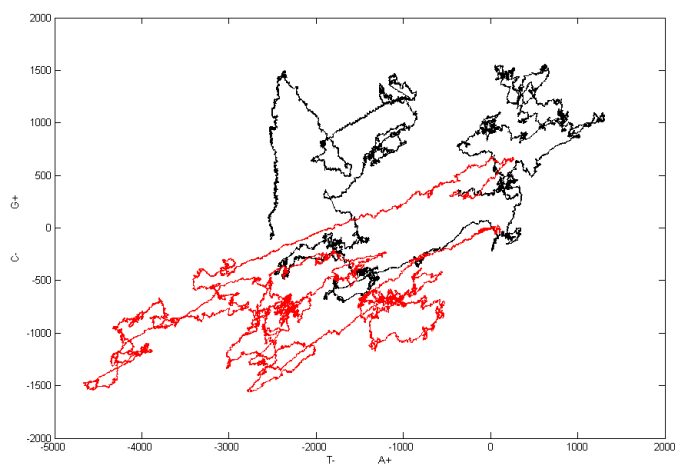
CDS only

GSS transformation

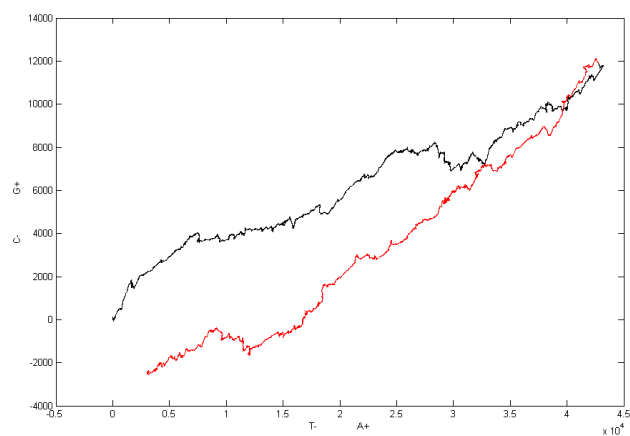
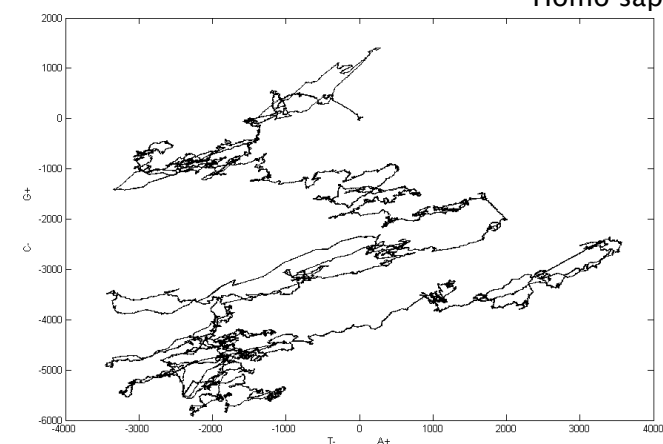
Homo sapiens, chromosome 13



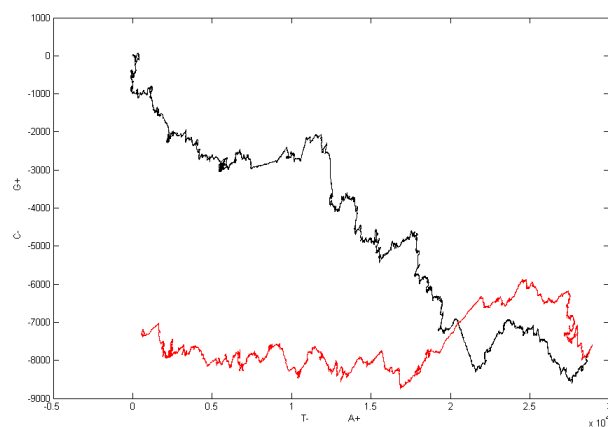
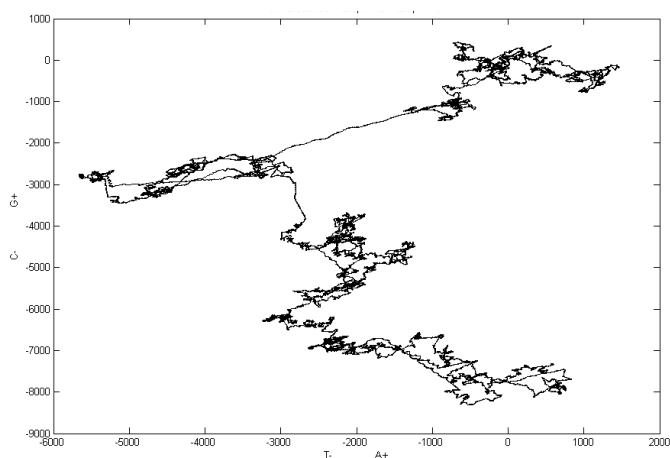
Homo sapiens, chromosome 14



Homo sapiens, chromosome 15



Homo sapiens, chromosome 16



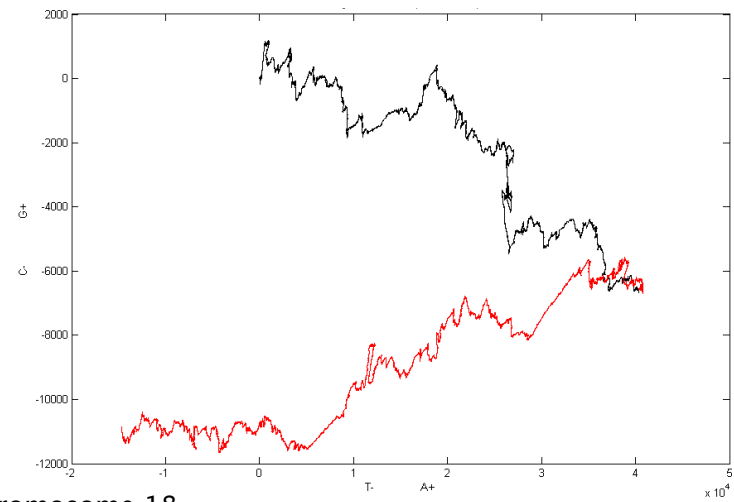
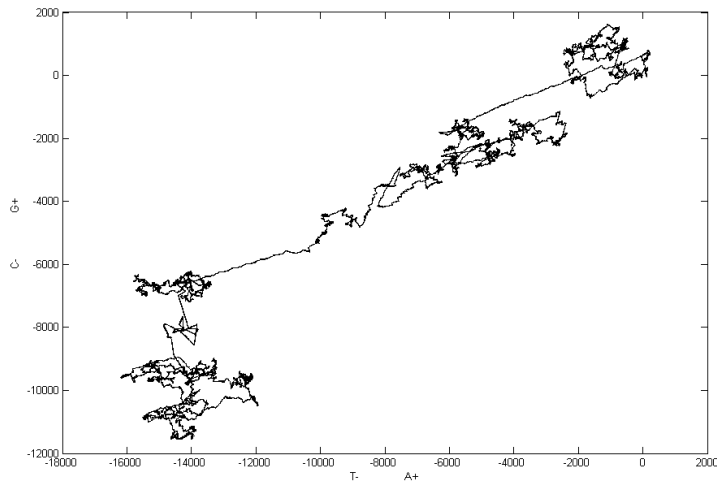
HUMAN

HUMAN

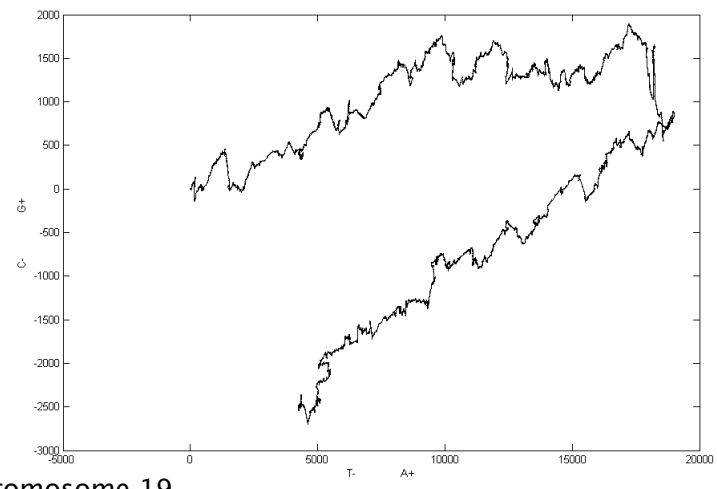
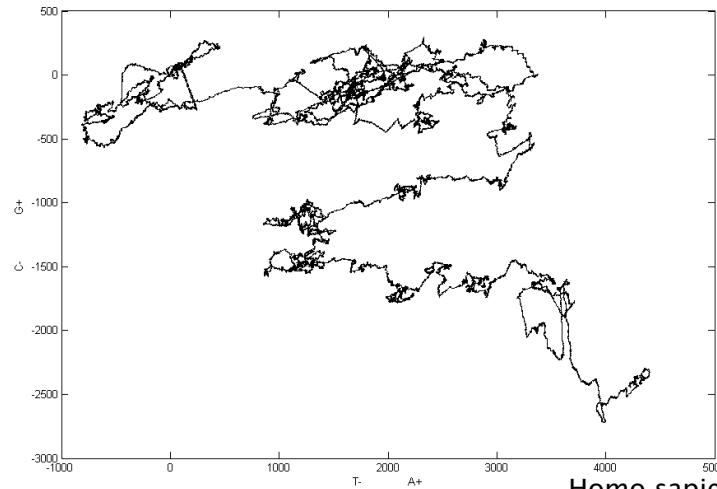
CDS only

GSS transformation

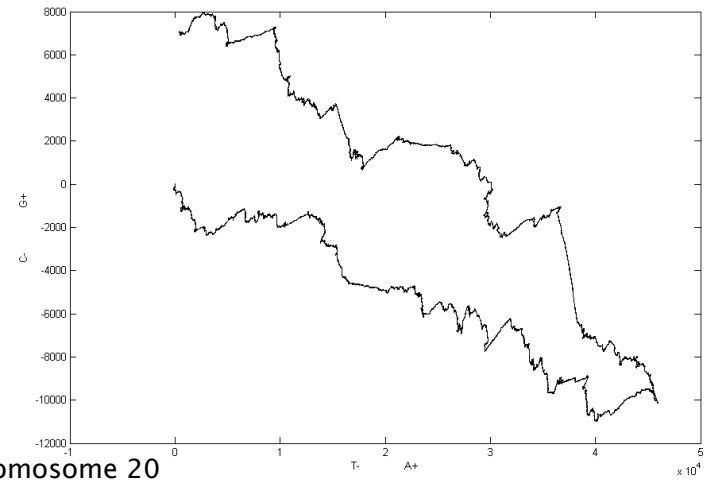
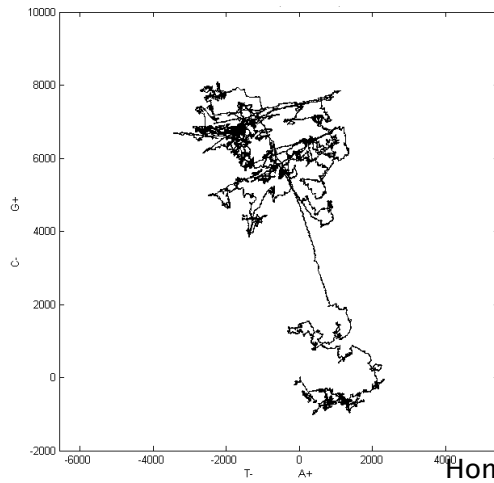
Homo sapiens, chromosome 17



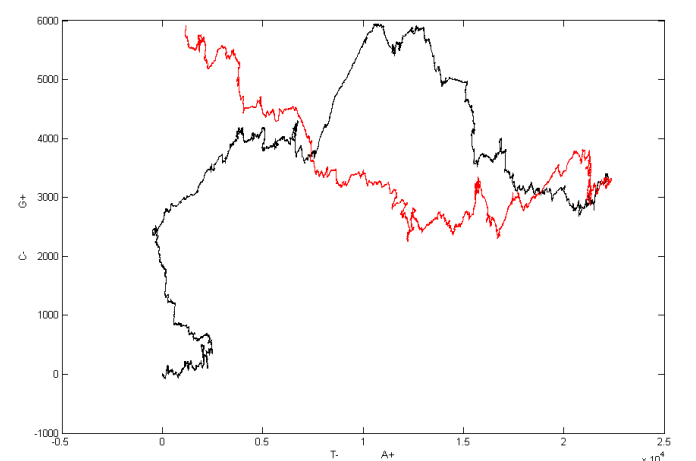
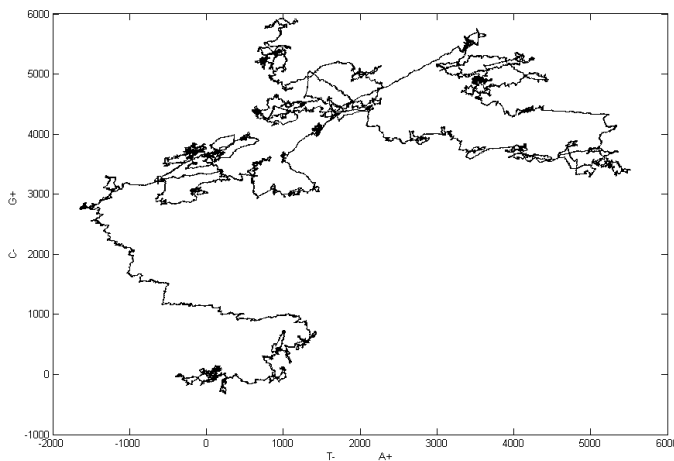
Homo sapiens, chromosome 18



Homo sapiens, chromosome 19



Homo sapiens, chromosome 20



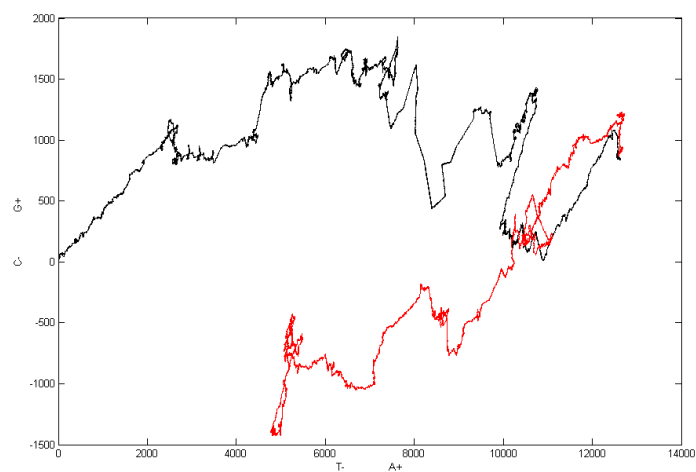
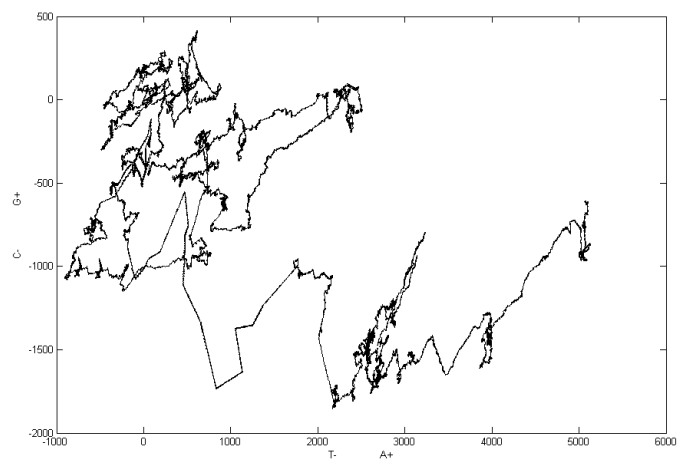
HUMAN

HUMAN

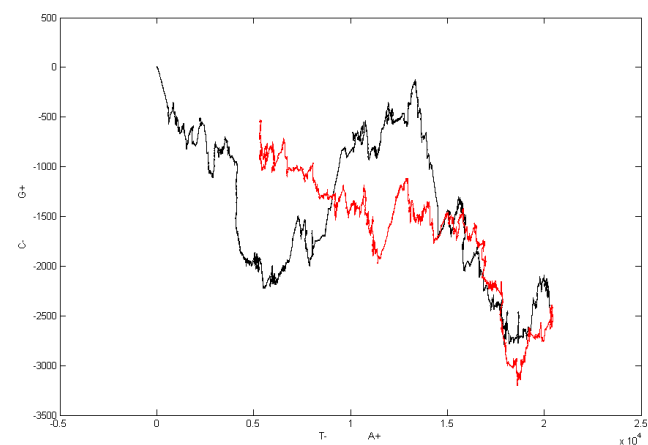
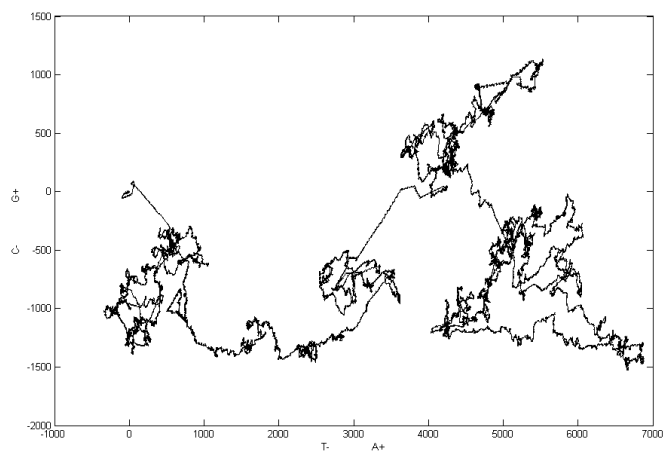
CDS only

GSS transformation

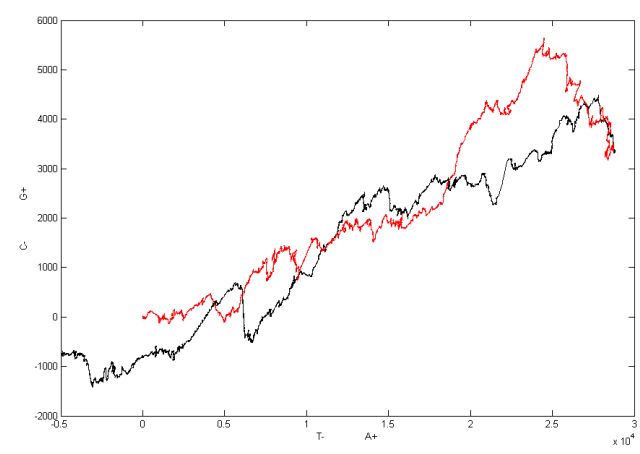
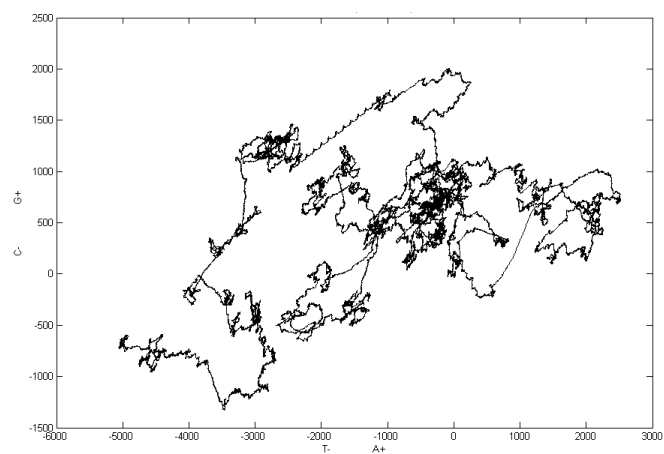
Homo sapiens, chromosome 21



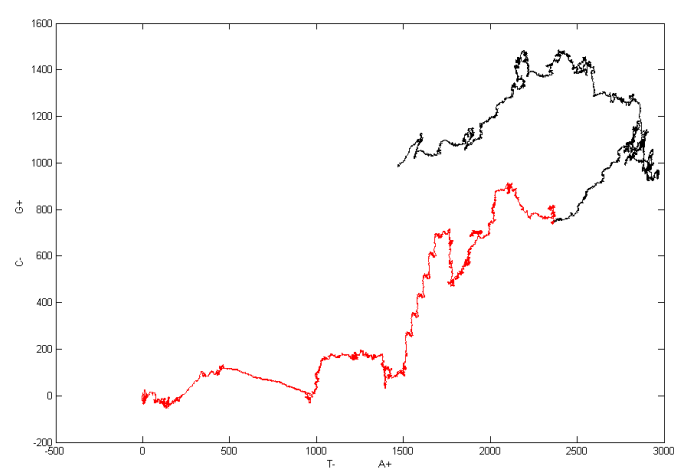
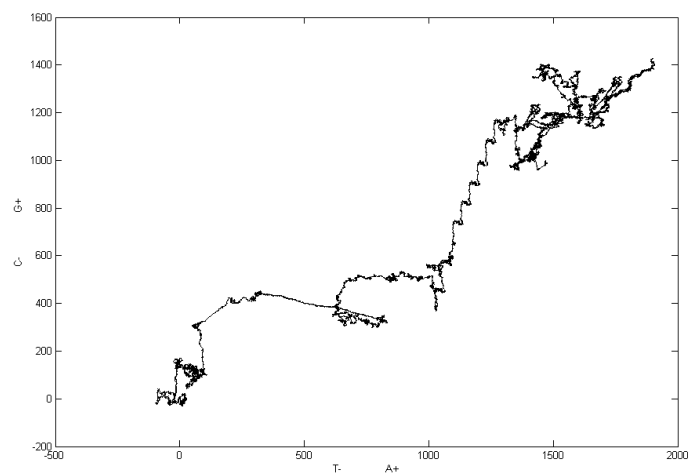
Homo sapiens, chromosome 22



Homo sapiens, chromosome X



Homo sapiens, chromosome Y



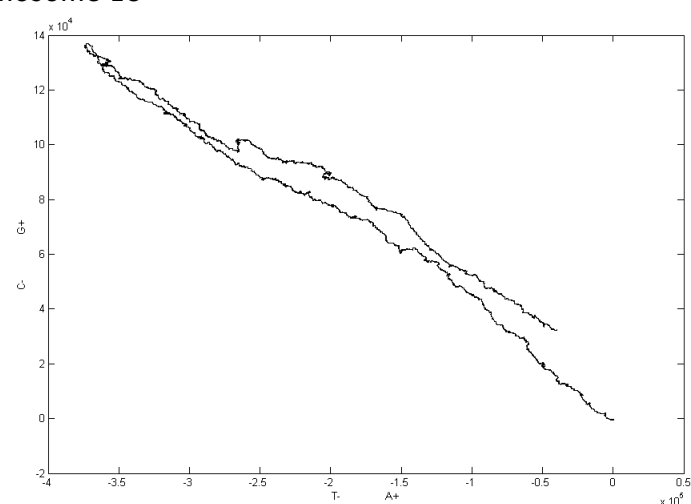
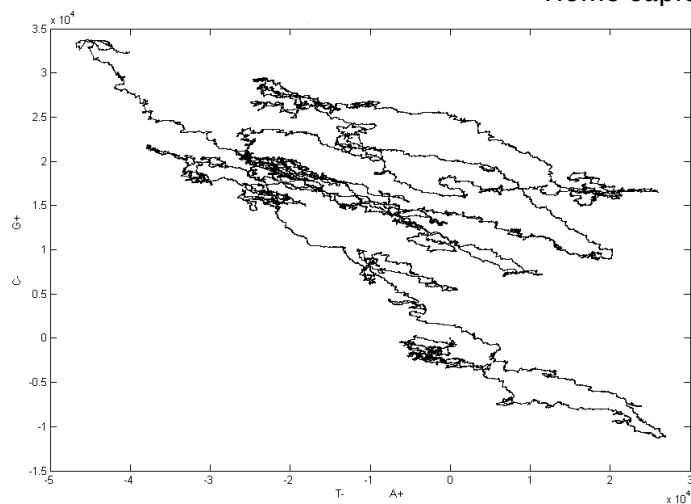
HUMAN

HUMAN

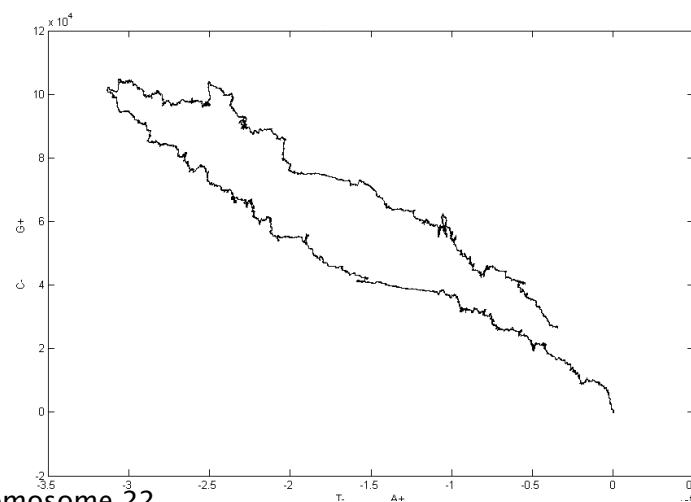
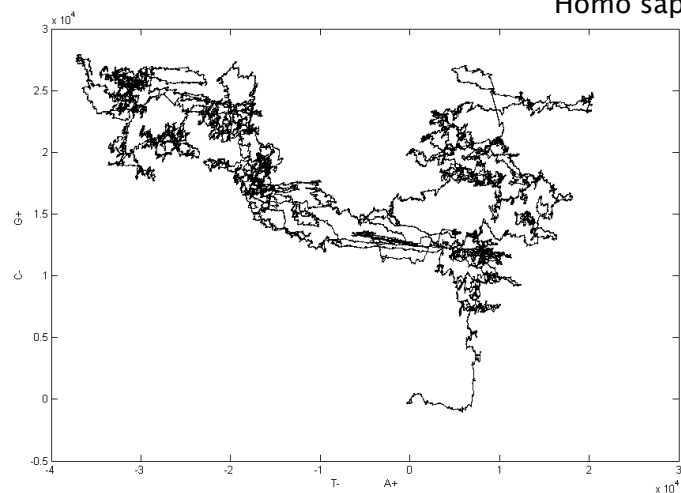
genes (CDS+introns)

GSS transformation

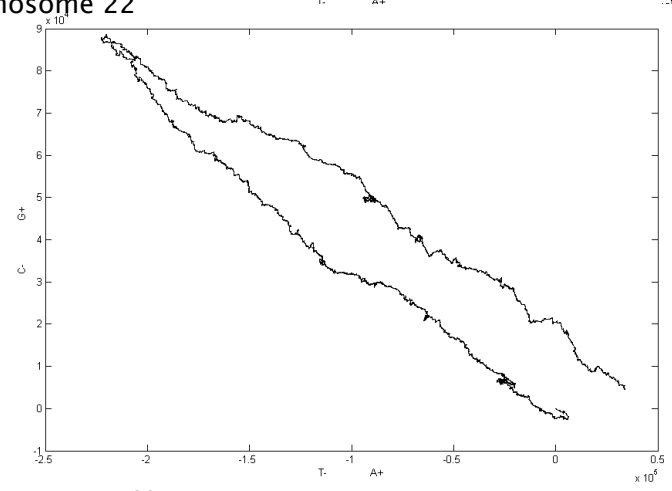
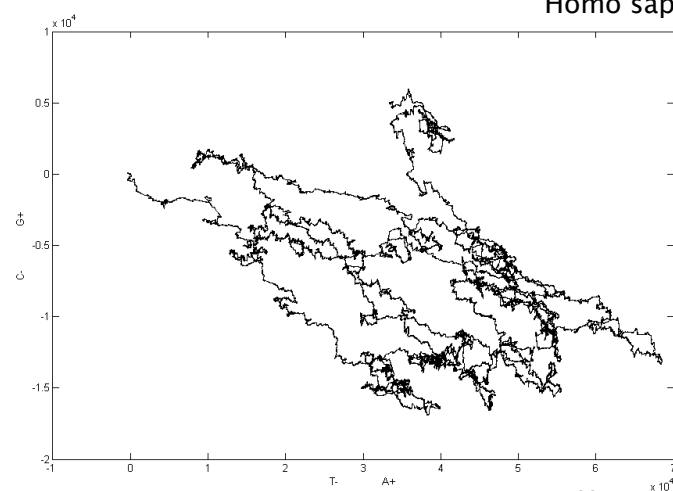
Homo sapiens, chromosome 18



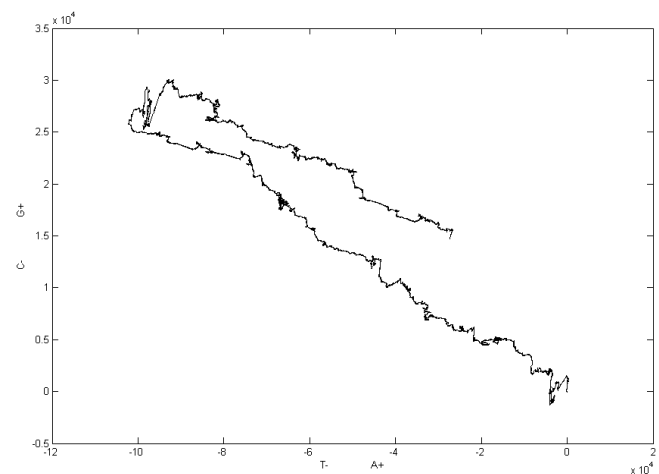
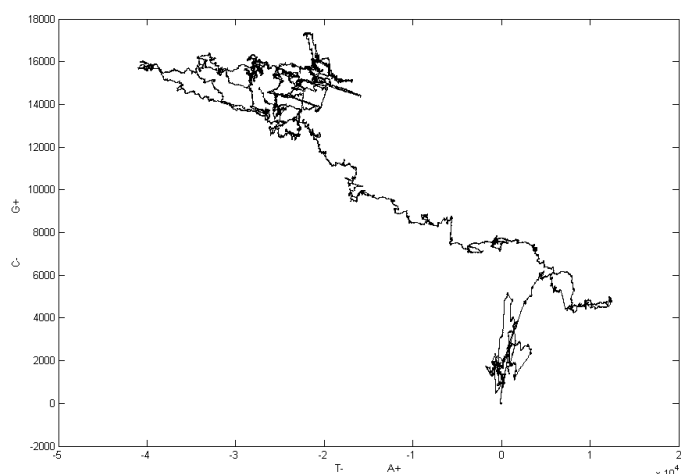
Homo sapiens, chromosome 19



Homo sapiens, chromosome 22



Homo sapiens, chromosome Y



HUMAN

HUMAN