

(A)



(B)

Figure S1: part of the virus landscape in genus level. Three pictures, figure 3, (A), (B), make up the landscape of the virus in the genus level. There are 102 genera in these three pictures, respectively. And genus 203 is in both figure 3 and (A), genus 102 is in both (A) and (B). We have proved that the convex hull pairs do not intersect each other in genus level through LP method and SVM method. In order to show the virus landscape, we only care about the shape of each hull and show the convex hulls of the virus in one picture as much as possible through scaling and translation.



Figure S2: phylogenetic tree of viruses of five families from Baltimore I.



Figure S3: phylogenetic tree of viruses of six families from Baltimore II.



Figure S4: phylogenetic tree of viruses of five families from Baltimore Ⅲ.



Figure S5: phylogenetic tree of viruses of five families from Baltimore Ⅳ.



Figure S6: phylogenetic tree of viruses of five families from Baltimore V.



Figure S7: phylogenetic tree of viruses of five families from Baltimore I and Ⅶ.