The preliminary analyses aim to test the effects of network structure on the coexistence (stability) of population, traits or both. There are 531441 simulations, each simulation gives whether there is co-existence of population or traits or not (if values at the end of simulation >1e-5, it is yes, otherwise it is no). I used a GAM statistical model with “coexist” as response variable, and several exploratory variables separately as follows:

Total_C: the number of Links of AB, AB is the whole matrix

B_C: the number of Links of B, B is for all the B parts within the matrix

A_C: the number of Links of A, A is for all the A parts within the matrix

A_positive: sum of A, which indicate the positive or negative feedback strength in A.

B_positive: sum of B, which indicate the positive or negative feedback strength in B.

Symm: the symmetry of AB. It is calculated by adding upper and lower triangle part of AB.

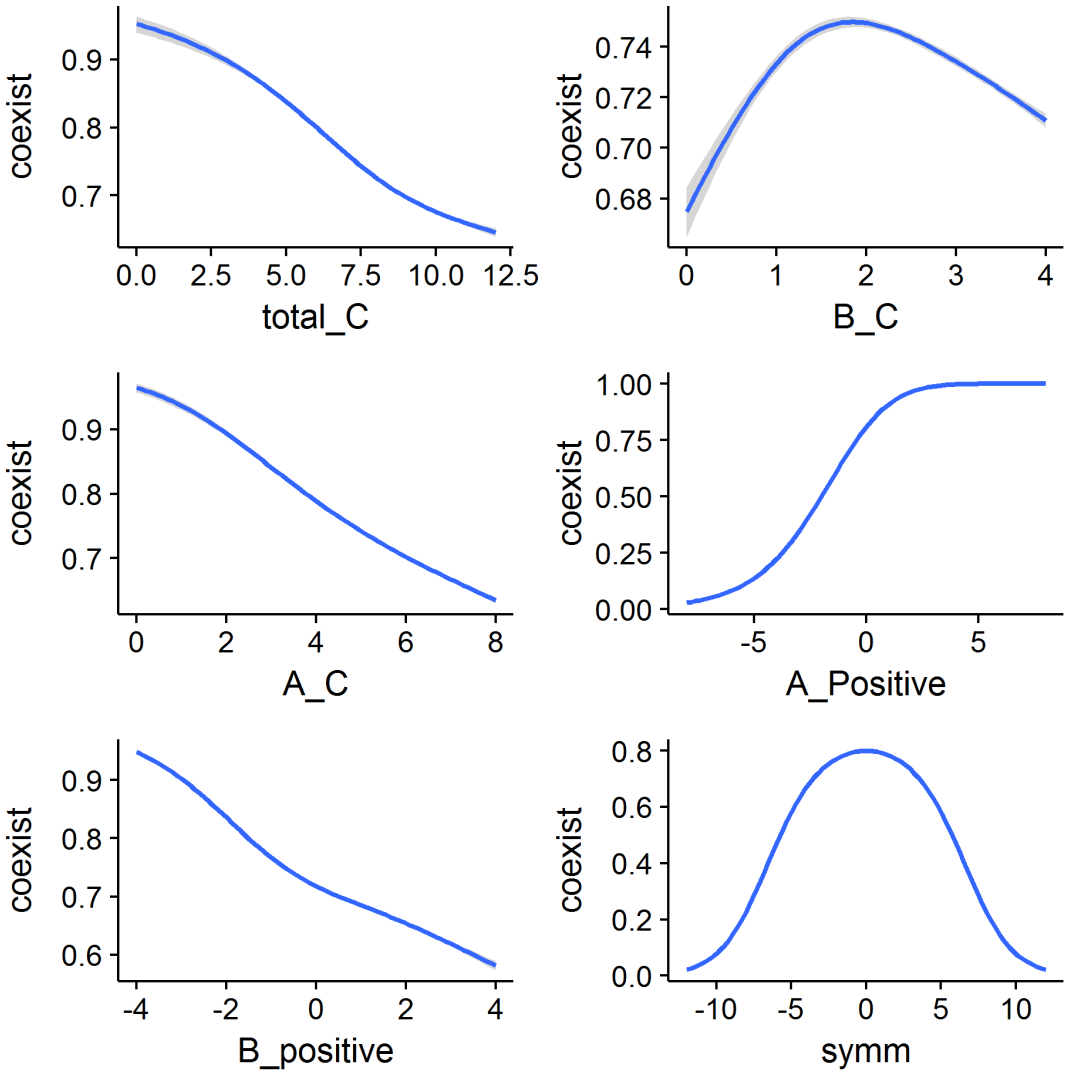

Fig.1 the effects of AB matrix structure on the probability of co-existence of population.

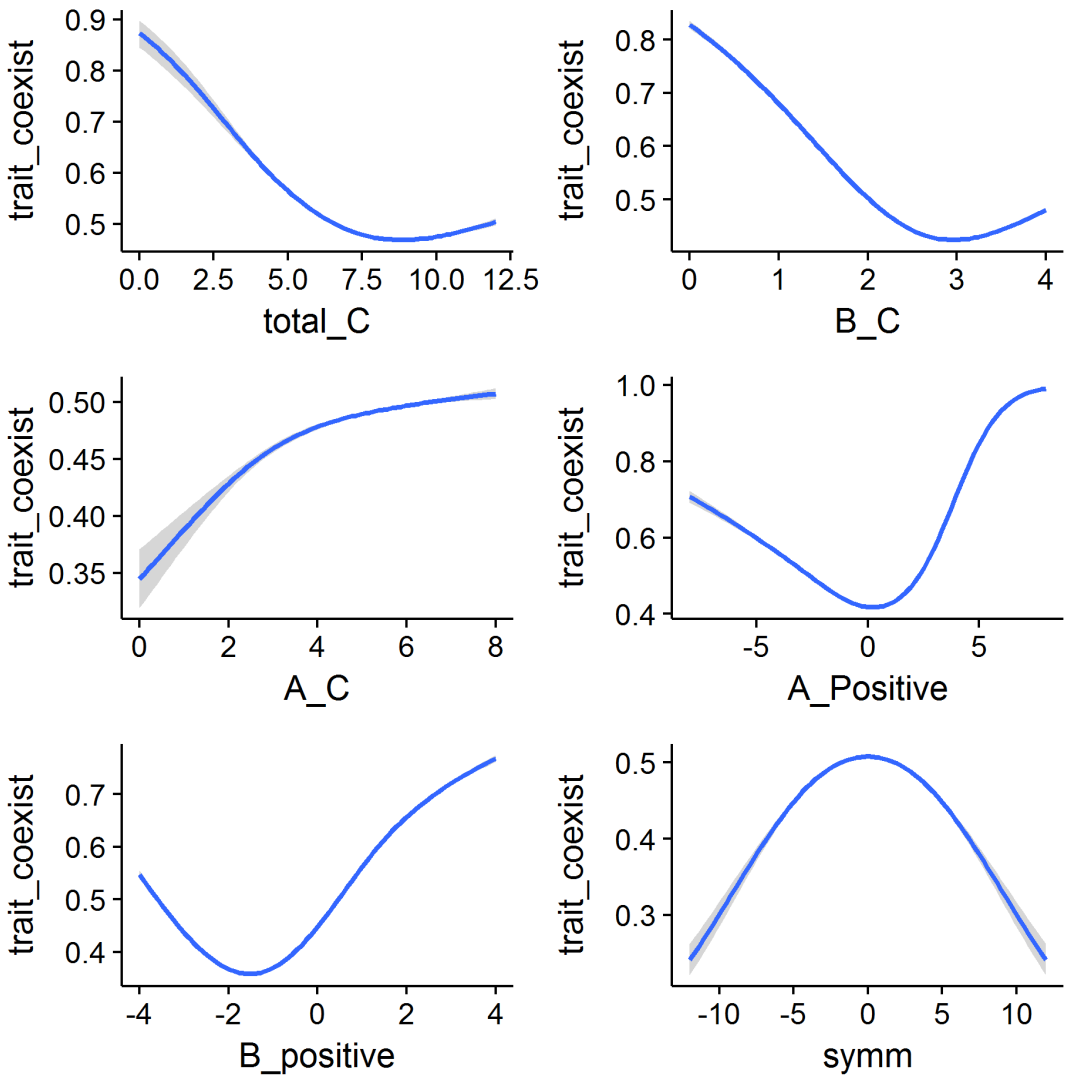

Fig.2. the effects of AB matrix structure on the probability of co-existence of traits.

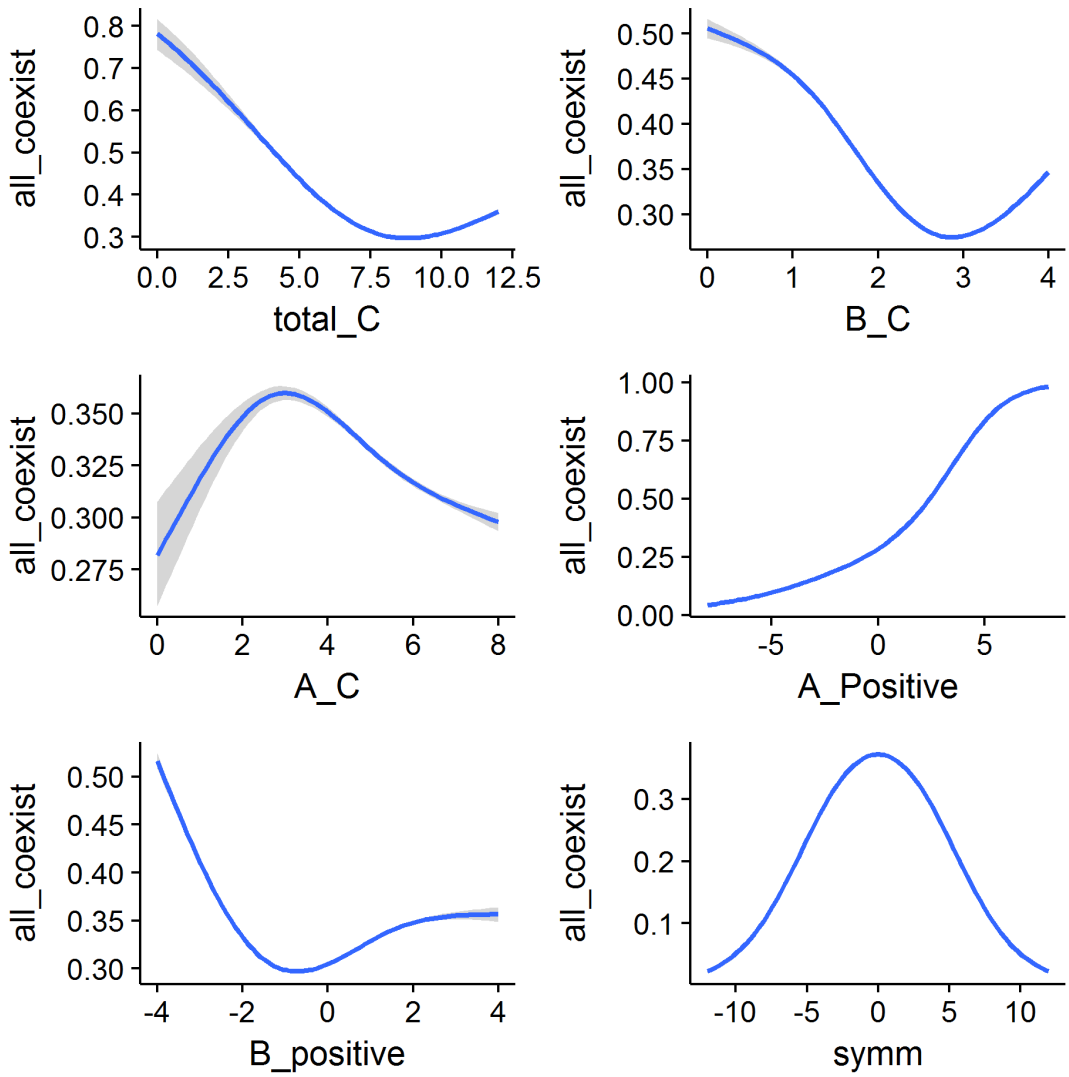

Fig.3 the effects of AB matrix structure on the probability of co-existence of both population and traits.