The plan of the future study　(Shigeyasu KAMIYA)

As mentioned in "The results of my studies," it is important to investigate complex hyperbolic triangle groups, so I will continue this research.

Specifically, I will proceed to study the following problems.

1) Our list of groups of type (n,n,∞;k) is not complete yet, so this should be completed.
   a) To construct new complex hyperbolic versions of Jorgensen's inequality as criteria for a group to be discrete.
   b) To make our "old" complex hyperbolic versions of Jorgensen's inequality more precise ones.
   c) To find out a criterion for a group to contain a Fuchsian subgroup.
   d) To generalize the result on Diophantine equations by Conway and Jones.
   e) To consider some criteria for arithmeticity of a group.
   f) To find a new method for constructing fundamental domains.
   g) To study how the properties of a group are changed when generators are transferred to different ones by certain isomorphisms.
   h) Given a discrete complex hyperbolic triangle group G. To discuss the difference between this group G and a group, which is "close" to G in the parameter space.
   i) To compare complex hyperbolic triangle groups with real ones by studying the construction of arithmetic triangle groups acting on the real hyperbolic space,
   j) To find discrete groups and construct their fundamental domains
   k) To find out non-arithmetic complex hyperbolic triangle groups.

2) To do the same problems as above in complex hyperbolic triangle groups of type (n,n,∞), which are not expressed as (n,n,∞;k). To construct fundamental domains for these discrete groups, because these groups seem to be discrete.

3) To study complex hyperbolic triangle groups of general type (p,q,r).

4) To find some relations between complex hyperbolic triangle groups and automorphic functions on complex hyperbolic space.