1116-20-1862 **Tsunekazu Nishinaka*** (nishinaka@econ.u-hyogo.ac.jp), University of Hyogo, 8-2-1, Gakuen-Nishimachi, Nishi-Ku, Kobe, Hyogo 651-2197, Japan. *Uncountable locally free groups and their group algebras.*

A group is called locally free if all of its finitely generated subgroups are free. It is known that there exist locally free groups which are not free. Clearly, a locally free group G whose cardinality is countable has always a countably infinite subgroup which is free. In this talk, we extend this fact to the result for general cardinality:

Theorem 1 If G is a locally free group, then G has a free subgroup whose cardinality is the same as that of G itself.

Now, a ring R is (right) primitive if it has a faithful irreducible (right) R module. In [1], the present author showed that the group algebra KG of a group G over a field K is primitive provided G is a non-abelian locally free group which has a free subgroup whose cardinality is the same as that of G. We can improve this result by Theorem 1:

Theorem 2 If G is a non-abelian locally free group, then the group algebra KG is primitive for any field K.

References

[1] Nishinaka, T. *Group rings of countable non-abelian locally free groups are primitive,* Int. J. algebra and computation, **21**, (2011), 409-431.

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