

## **Abstract of Doctoral Thesis**

### **Title: The study on historical transition of land use in Kakamigahara plateau**

ニシムラ カツヒロ

NISHIMURA Katsuhiro

The purpose of this study is to clarify the close connection between environmental features of plateau and land use through detailed analysis of the topographical characteristics of the Kakamigahara plateau located in Kakamigahara city, Gifu Prefecture. I have also conducted the comparison of land use and social background from ancient to modern times. This analysis adopted the method of regional studies and worked on various interdisciplinary fields such as natural sciences, social science, civil engineering, environmental engineering from an interdisciplinary perspective.

Regarding topographic features of the Kakamigahara plateau, I have organized and analyzed currently existing information such as existing boring data, old maps, survey of streets and gravel-digging sites. Then, while verifying the previous research on the formation process of the plateau, I presented new findings using topographic maps and cross section.

In parallel with considering the conditions of land use utilizing the distinctive terrain of the area including the Kakamigahara plateau, lowlands terraces, rocky hills, Kiso river from the location of villages, ancient tombs, mountain castles, samurai residences, etc. I have also analyzed its construction method from the civil engineering point of view by process restoration and earthwork mass calculation.

Regarding the transition of land use, I have visualized by diagrams the correlations between the topography and the distribution of historical remains as well as distribution change by age and analyzed its meaning in relation to disaster prevention, rice farming society, environmental resources, city planning etc. I have also pointed out the idea of a person facing disasters and tackling them basing on the examples of ancient disaster ruins and disaster prevention structure of the modern times.

In addition, I analyzed the reasons of the rapid development of the Kakamigahara plateau, which was barren land for agriculture. I also surveyed and arranged the historical materials including newly released documents about the early airfield facilities and the process of establishment of modern cities.

By summarizing the above analysis items, I came to conclusion that the environmental characteristics of the Kakamigahara plateau have merits and demerits depending on social needs. It nurtured a region-specific history deeply involved in the transition of land use, and eventually became the trigger for the further city development based on the modern aircraft industry as its core.