

Seminar SAW

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Land registers and surveyors: Measuring lengths and areas

**ZOU Dahai 鄒大海 and CHEN Wei 陳巍**  
**Institute for the History of Natural Sciences, Chinese Academy of Sciences**

*Methods for the calculation of fields and the land system  
in the middle ancient period of China:  
The impact of equal-field system on land surveying*

This talk discusses the relation between mathematical documents concerning land surveying and the land system in the Middle Ancient Period of China, focusing especially on the relationship between the Equal-Field System and the first chapter “Administrative Section for Fields” of the Wu Cao Suan Jing (五曹算经, *Computational Canon of the Five Administrative Sections*, hereafter Wu Cao). We demonstrate that the great increase in the number of shapes and names of fields and corresponding area-formulae, the adoption of less advanced methods, of lower precision, the deliberate avoidance of fractions, and the preference for specific methods rather than abstract ones, all features to which the Wu Cao bears witness, can be explained by the need of enforcing the Equal-Field System since 485 CE. Furthermore, we suggest that some features of mathematical knowledge, such as the choice of methods and the way in which mathematical documents express knowledge, may be influenced by the social factors, as much as mathematical documents may be influenced by the authors’ ability in mathematics and their individual interests.