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### Special panel organised by the SAW Project

#### *Meanings and uses of measuring units in pre-modern China*

Chaired by **Karine Chemla** (SPHERE UMR 7219, CNRS & U. Paris Diderot, ERC Advanced Research Grant SAW) & **Zhu Yiwen** (PhD Institute for the History of Natural Sciences, CAS, China & Post-doc, ERC Advanced Research grant SAW, SPHERE UMR 7219)

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#### *Measuring units and quantities in Chinese ancient astronomic tables*

**Abstract** - Chinese astronomic measuring unit systems, including the units of length, time and angle, varied in time. In ancient times, a set of length units (1 *zhang* 丈 = 10 *chi* 尺 = 100 *cun* 寸) was used in parallel with the units 1 *du* or degree 度 = 100 *fen* or minutes 分 = 10000 *miao* or seconds 秒 in order to describe the position of the different celestial bodies. After Islamic astronomy and European astronomy were transmitted into China in the early and late Ming Dynasty respectively, the angular unit system arc-degree began to be adopted and widely used. In order to integrate the different systems of *chi* and *du*, during the Ming Dynasty a definition of one *chi* equal to one *du* began to be proposed. The Chinese ancient *du* system was gradually replaced by the arc-degree system. This change can be clearly reflected in the changes of units and quantities in astronomical tables. The presentation will focus on the discussion of the measuring unit *du*. In Chinese ancient astronomy, its literal meaning was “degree”. However, it was actually more a linear division than an angular one. The presentation will show how its meaning was changed in early modern times in China. The way in which quantities of divisions developed from the usages of fractions and decimal system to sexagesimal system in astronomical tables will also be discussed.