Theories and practices of measurement in ancient sciences *by Olivier Defaux | Fabio Guidetti | Max Planck*

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The historical development of ancient science is inseparably tied to the issue of measurement. On the one side, the elaboration of theoretical models, e.g. in the fields of astronomy or geography, can be interpreted as a way to make the most out of the limited amount of actual measurements available to ancient scholars of the natural world; on the other hand, measurements were also indispensable for the application of those models to practical purposes, e.g. the control and exploitation of land, or the manufacturing of instruments for timekeeping. At the same time, the need to express the measured data, and to elaborate on them, in the most accurate way possible fostered the invention of innovative conceptual tools, giving an essential impulse to the development of abstract sciences such as mathematics and geometry. This panel will explore the theories and practices of measurement in ancient sciences, through the cross-cultural comparison between the Greco-Roman world and the civilisations of Egypt, Mesopotamia and the late antique Near East. The focus of the discussion will be the interaction between measurements, understood as the extraction of numerical data from the natural world, and the elaboration of theoretical models to explain them, in order to better define the integrated roles of theory and practice within the development of a scientific discourse. The panel will bring together the competences and expertise of ancient historians, classical philologists and archaeologists in an interdisciplinary perspective.