

SAW Seminar:

History and Philosophy of Mathematics

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Equations and velocities of the Sun and the Moon in the Zij al-Sindhind by al-Khwarizmi

Abstract: The astronomical tables ascribed to al-Khwārizmī (early 9th century) reached al-Andalus quite soon after their compilation in the East, and had a considerable success in the Iberian Peninsula, where they were used for several centuries. This so-called Indian tradition coexisted in the Peninsula with the astronomical practice stemming from Ptolemy's works, also referred to as the Greek tradition, which was predominant both in the West and the East during the Middle Ages.

The solar and lunar equations in the Zij al-Sindhind present some basic features that make them differ from those compiled by Ptolemy and his followers. In turn, al-Khwarizmi's tables for the solar and lunar velocities depend on the equations of the corresponding luminaries, and thus gave different results than those in the Greek tradition.

In this presentation we will explain the different models underlying the tables for the equations and the velocities of both luminaries, highlight the different parameters involved in them, and present the methods used in their compilation.