

HONG KONG BAPTIST UNIVERSITY Department of Mathematics 普及數學公開講座

Public Lecture on Mathematics

布拉格天文鐘的數學原理是什麼呢?

What mathematics is hidden behind the astronomical clock of Prague?

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Date: 22 February 2008 (Friday)

Time: 4:30 pm (Preceded by Reception at 4:00 pm)

Venue: University Chapel, Ho Sin Hang Campus

Hong Kong Baptist University





The Prague Astronomical Clock or Prague Orloj (Czech: Prask orloj) is a medieval astronomical clock located in Prague, the capital of the Czech Republic, at 50513.23N, 142515.30E. The Orloj is mounted on the southern wall of Old Town City Hall in the Old Town Square and is a popular tourist attraction.

摘要 我們探討幾個和布拉格天文鐘聯繫密切的幾何學和代數學定理。我們指出三角數和天文鐘 之間有著非同尋常的關係。天文鐘的鐘盤是一個 時鐘機構的古代天體觀測儀,它表示一個天體從 北極到南極在正切平面上形成的立體投影。

Abstract We present several geometrical and algebraical theorems that have a close connection with the astronomical clock (horologe) of Prague. In particular, we show that there is a remarkable relationship between the triangular numbers and the bellworks of the astronomical clock. The dial-plate is an astrolabe controlled by a clockwork mechanism. It represents a stereographic projection of the celestial sphere from its North Pole onto the tangent plane passing through the South Pole.

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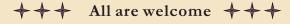
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The Medium of Instruction: English

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The Orloj is composed of three main components: the astronomical dial, representing the position of the Sun and Moon in the sky and displaying various astronomical details; "The Walk of the Apostles", a clockwork hourly show of figures of the Apostles and other moving sculptures; and a calendar dial with medallions representing the