



香港浸會大學  
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?

**Dr. Alena Solcova**

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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 50°13.23'N, 14°25'15.30"E. 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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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 months.