

Geometry and Crystals in the Cuarto Real

A Scientific, Artistic, and Heritage Visit in Granada.

International School on Biological Crystallization (ISBC2026) – 9th Edition
Granada, 4th – 9th October 2026.

Date of visit: October 6, 2026. 19.30 – 21.00 h.

Meeting Point: Plaza de los Campos (close to *Cuarto Real de Santo Domingo*).

Direction and guide: Álvaro Martínez Sevilla. Scientific Director of the Mathematical Walks project of the Descubre Foundation. Researcher and Science Communicator.

Features: The tour will be guided with headphones and we will accompany the explanation with abundant graphic material on tablets and some 3D printed models.

Heritage Building: Cuarto Real de Santo Domingo.

Mathematical Walks Project: This activity is linked to the **Scientific Tourism** project derived from the *Mathematical Walks project*, coordinated by the Descubre Foundation. For more information, please visit <https://paseosmaticos.fundaciondescubre.es>

Description: On this visit, we will explore a little-known gem of Granada's monumental heritage, showcasing an emblematic buildings from the Nasrid period, brimming with history, symbolism, and geometric significance.

The *Cuarto Real de Santo Domingo* is the 'seed of the Alhambra' —a pre-Nasrid *qubba* and one of the best-preserved of its kind— that offers a glimpse into certain structural, decorative, and symbolic features later replicated in the Alhambra. The palace also displays unique geometric peculiarities found nowhere else in al-Andalus.

We will explore their mathematical and art-historical characteristics, placing special emphasis on geometric decoration —specifically tilework and stucco— which embodies a variety of planar crystallographic patterns. We will also analyze arches and coffered ceilings, proportions, and modular patterns, examining how their symbolic interpretation underpins the transmission of a culture through a monumental program.

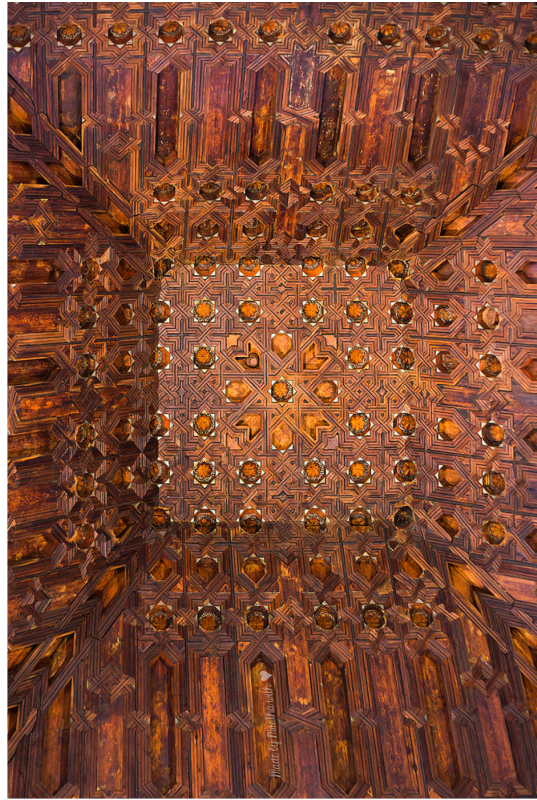
This visit will link mathematics and technology with art and history, offering a scientific perspective on one of Granada's most remarkable monuments.

Images

1. View of the main chamber of the qubba.
2. Coffered ceiling in the *Cuarto Real*, depicting the seven heavens.
3. Muqarnas and tilework with Kufic script.
4. Mosaic geometrically constructed as a $p4m$ planar crystallographic group
- 5, 6 and 7. Drawing of mosaics from the Cuarto Real by J.M. Rubio, in *Monumentos Arq. de España*
- 8 and 9. Visits to the *Cuarto Real*.



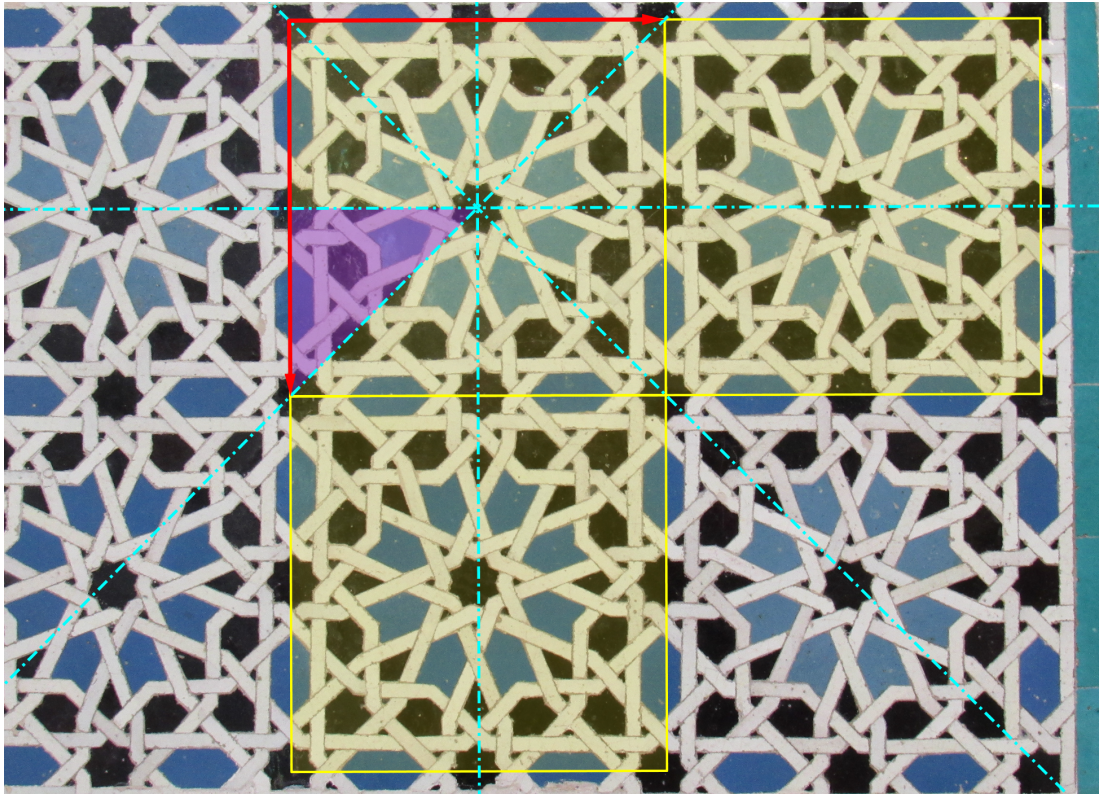
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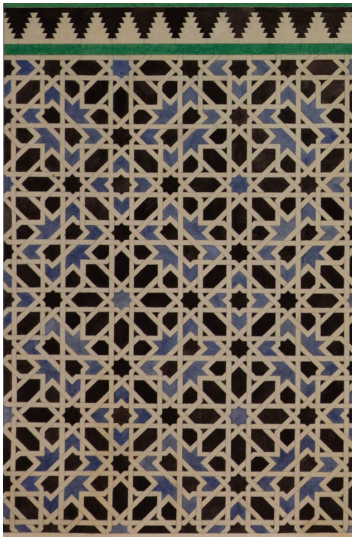
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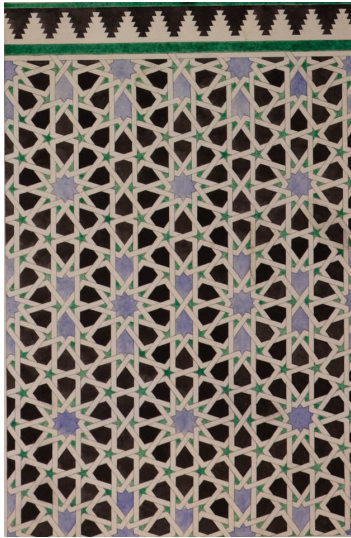
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