

Keynote Lecture

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Indian geometric patterns, compared to Persian and Moroccan styles

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Any accidental traveler visiting the Alhambra palace in Granada, the medina of Fes in Morocco, the mosques in Cairo or Istanbul, walking through the Persian land at Isfahan, towards the Levant at Samarkand, and eventually touching the Indian continent by its Muslim provinces, has certainly been fascinated by the architectural wonders he met along the way. Particularly by the intriguing geometric patterns that adorn the skin of the traditional architecture.

On this vast territory, one can feel a unity of style, despite some definite regional differences. What makes that unity, what are the invariants and the differences?

Is this sophisticated style of art still alive?

Which are its connections with crystallography?

Can it evolve again?

We are going to explore these questions in the field of the plane geometrical patterns.

Geometrical decoration can be made of bricks, painted on wood, carved on plaster... However, its foremost expression can be seen in the technique of earthenware mosaic.

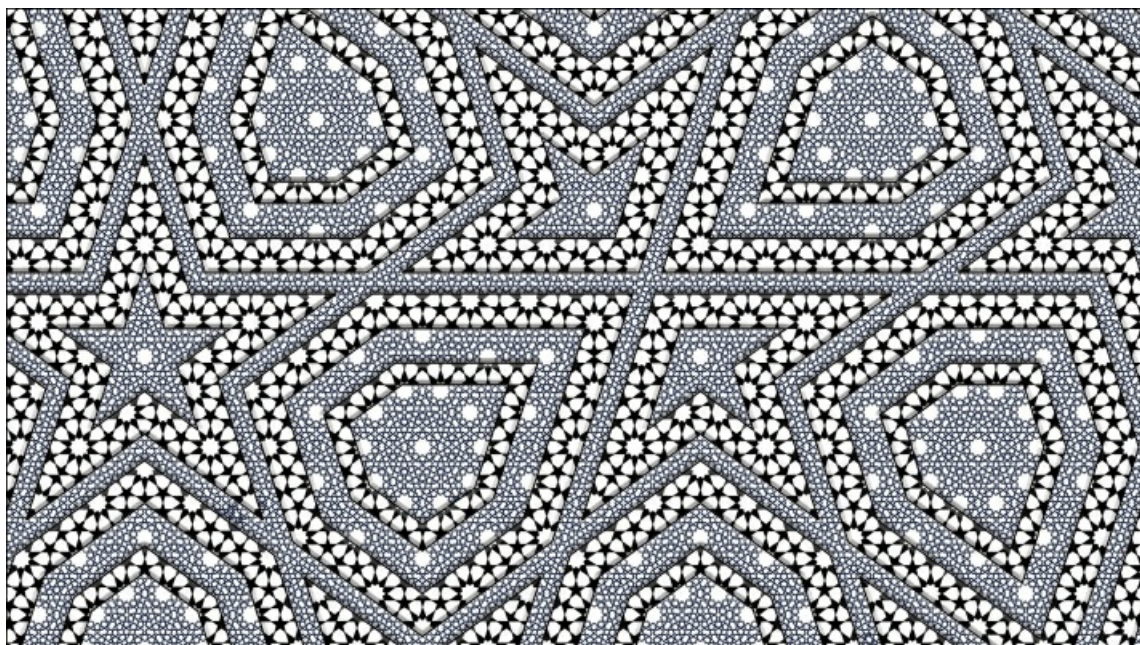
In Morocco and in Iran as well, the shapes are cut down from monochrome glazed ceramic tiles. But the clay of Isfahan is not the clay of Fes: Only the last enable to cut the fine and precise "Zellij" tiles. The tools themselves are slightly different, according to different needs.

What's about the techniques used in India?

Upstream the material achievement, we will focus on the patterns design.

We will also explore their potential in respect with some contemporary scientific concepts such as self-similarity. By the way, we will try to clarify the controversial relationship between those patterns and the quasicrystals.

Pentagonal symmetry is dominant in Persian style, while Morocco and Andalusia fully explore the possibilities of the octagon, and the hexagonal system is very common in India. There are, however, some patterns crossing the whole Islamic world, from Granada to Agra, via Samarkand. Particularly, a famous 10-pointed star.



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