Contribution ID: **7** Type: **not specified**

Progress on Covering a Hexagon with Seven Unit Triangles

Sunday, 24 August 2025 09:30 (30 minutes)

John Conway and Alexander Soifer showed that an equilateral triangle T with side length $n+\varepsilon$ can be covered using n^2+2 unit equilateral triangles. They also conjectured that using n^2+1 triangles is not enough.

As a more approachable version of this problem, we ask: Can a regular hexagon with side length $1+\varepsilon$ be covered by just 7 unit equilateral triangles? This simplified question reflects core aspects of the Conway–Soifer conjecture.

In this talk, I will present our progress on this problem, including our use of computer-assisted search and the insights it led to. This is joint work with Jineon Baek.

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Session Classification: Contributed talks