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SPHERE PACKINGS, REFLECTION GROUPS, AND ARITHMETIC

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This minicourse will review recent advances in our understanding of the interplay between the following:

(1) discrete group actions, especially those generated by reflections,

(2) sphere packings, especially those arising as limit sets of the former,

(3) arithmetic, both in terms of integrality properties of the aforementioned sphere packings, and in the resulting arithmeticity of the discrete groups.

No prior knowledge of these topics will be assumed.