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Ehrhart's polynomial for equilateral triangles in $\mathbb Z^3$

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In this paper we calculate the Ehrhart's polynomial associated with a 2-dimensional regular polytope (i.e. equilateral triangles) in $\mathbb Z^3$. The polynomial takes a relatively simple form in terms of the coordinates of the vertices of the polytope and it depends heavily on the value d and its divisors, where $d=\sqrt{\frac{a^2+b^2+c^2}{3}}$ and (a,b,c) ($\gcd(a,b,c)=1$) is a vector with integer coordinates normal to the plane containing the triangle.

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