Problem. *Let x, y, z be non-negative numbers such that $x + y + z = 1$ and let a, b, c be positive real numbers satisfying $8(ab + bc + ca) - 5(a^2 + b^2 + c^2) > 0$. Find the minimum of the expression*

$$P = (ax + by + cz)(x^2 + y^2 + z^2).$$