Suppose we are given three vectors: $a = (a_0, a_1, a_2)$, $b = (b_0, b_1, b_2)$ and $c = (c_0, c_1, c_2)$. Suppose that we need to find minimal distance between line L through a and b and vector c.

In general, point on line L will have the form

$$(a_0, a_1, a_2) + t(b_0 - a_0, b_1 - a_1, b_2 - a_2), \quad t \in \mathbb{R}$$

and the square distance between point on L and w will be

$$|(a_0 - c_0, a_1 - c_1, a_2 - c_2) + t(b_0 - a_0, b_1 - a_1, b_2 - a_2)|^2 = |(a_0 - c_0, a_1 - c_1, a_2 - c_2)|^2 + 2t((a_0 - c_0)(b_0 - a_0) + (a_1 - c_1)(b_1 - a_1) + (a_2 - c_2)(b_2 - a_2)) + t^2|(b_0 - a_0, b_1 - a_1) + (a_2 - c_2)(b_2 - a_2))|^2 + 2t(a_0 - a_0)(b_0 - a_0) + (a_1 - c_1)(b_1 - a_1) + (a_2 - c_2)(b_2 - a_2)) + t^2|(b_0 - a_0, b_1 - a_1)(b_1 - a_1) + (a_2 - c_2)(b_2 - a_2))|^2 + 2t(a_0 - a_0)(b_0 - a_0) + (a_1 - c_1)(b_1 - a_1) + (a_2 - c_2)(b_2 - a_2)) + t^2|(a_0 - a_0)(b_0 - a_0) + (a_1 - c_1)(b_1 - a_1) + (a_2 - c_2)(b_2 - a_2))|^2 + t^2|(a_0 - a_0)(b_0 - a_0) + (a_1 - c_1)(b_1 - a_1) + (a_2 - c_2)(b_2 - a_2))|^2 + t^2|(a_0 - a_0)(b_0 - a_0) + (a_1 - c_1)(b_1 - a_1) + (a_2 - a_2)(b_2 - a_2))|^2 + t^2|(a_0 - a_0)(b_0 - a_0) + (a_1 - c_1)(b_1 - a_1) + (a_2 - a_2)(b_2 - a_2))|^2 + t^2|(a_0 - a_0)(b_0 - a_0) + (a_1 - a_1)(b_1 - a_1) + (a_2 - a_2)(b_2 - a_2))|^2 + t^2|(a_0 - a_0)(b_0 - a_0) + (a_1 - a_1)(b_1 - a_1) + (a_2 - a_2)(b_2 - a_2))|^2 + t^2|(a_0 - a_0)(b_0 - a_0) + (a_1 - a_1)(b_1 - a_1) + (a_2 - a_2)(b_2 - a_2))|^2 + t^2|(a_0 - a_0)(b_0 - a_0) + (a_1 - a_1)(b_1 - a_1) + (a_2 - a_2)(b_2 - a_2))|^2 + t^2|(a_0 - a_0)(b_0 - a_0) + (a_1 - a_1)(b_1 - a_1) + (a_2 - a_2)(b_2 - a_2))|^2 + t^2|(a_0 - a_0)(b_0 - a_0) + (a_1 - a_1)(b_1 - a_1) + (a_2 - a_2)(b_2 - a_2))|^2 + t^2|(a_0 - a_0)(b_1 - a_1)(b_1 - a_1)(b_2 - a_2)(b_2 - a_2)|^2 + t^2|(a_0 - a_0)(b_1 - a_1)(b_1 - a_1)(b_2 - a_2)(b_2 - a_2)|^2 + t^2|(a_0 - a_0)(b_1 - a_1)(b_1 - a_1)(b_2 - a_2)(b_2 - a_2)|^2 + t^2|(a_0 - a_0)(b_1 - a_1)(b_1 - a_1)(b_2 - a_2)(b_2 - a_2)|^2 + t^2|(a_0 - a_0)(b_1 - a_1)(b_2 - a_2)(b_2 - a_2)(b_1 - a_1)(b_2 - a_2)|^2 + t^2|(a_0 - a_0)(b_1 - a_1)(b_2 - a_2)(b_2 - a_2)(b_2 - a_2)|^2 + t^2|^2 +$$

so one simply need to minimize this square equation.

Note that for square equation $ax^2 + bx + c$, a > 0 minimum is attained at x = -b/2a