Find the limit of the function

$$f(x,y) = \frac{\sin(5(x^2+y^2))}{5(x^2+y^2)}$$

as $(x,y) \to (0,0)$. Assume that polynomials, exponentials, logarithmic, and trigonometric functions are continuous. Hint: $\lim_{t\to 0} \frac{\sin t}{t} = 1$.

$$\lim_{(x,y)\to(0,0)} \frac{\sin(5(x^2+y^2))}{5(x^2+y^2)} = \boxed{}$$

Enter DNE if the limit does not exist.

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