Once more about v > c

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ABSTRACT: The physical interpretation of the singularity in the dependence n(ω) of the refractive index upon the frequency has been analyzed. Next, the lacks of this interpretation have been presented and it has been demonstrated that this singularity testifies the motion with the velocity v > c.

1. Introduction

We have the formula:

$$n = 1 + \frac{N\, q_e^2}{2\varepsilon_o m\, (\omega_o^2 - \omega^2)}$$

For $\omega > \omega_o$ we have $n < 1$,

so: $v = \frac{c}{n} > c$.

2. Interpretation according to great Feynman

“The velocity with which it is possible to send a signal is not determined by the refractive index at one frequency but it depends on the values of the refractive index at many frequencies. The refractive index gives us only the velocity of the displacement of nodes-crests of the wave and the node thereby isn’t the signal” [1].

3. Correct interpretation

The crests of the wave create an envelope. The envelope of crests of the wave is the field propagating with the velocity v, v > c. The phase velocity has the physical interpretation [2]. It is a really existing velocity of a certain object.

4. Recapitulation

The general formula:

$$n = 1 + \frac{q_e}{2\varepsilon_0 m} \sum_k \frac{N_k}{\omega_k^2 - \omega^2 - i\gamma_k \omega}$$

n is complex.

v = $\frac{c}{n}$ is complex too.

Why shouldn't the node be the signal?
The Feynman interpretation is stretched to the thesis accepted in advance.

References:

[1] R. P. Feynman, R. B. Leighton, M. Sands, "Feynman Lectures on Physics", vol. I part II
[2] Z. Morawski, "Implications of complex mass", this website