

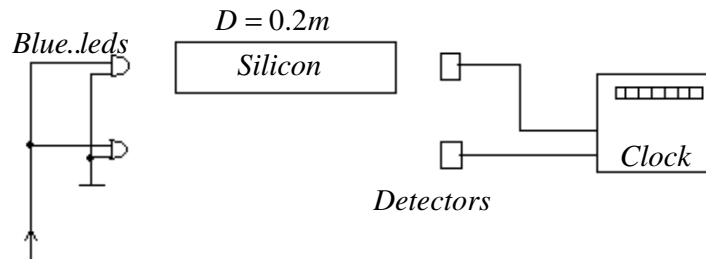
Visible Faster than Light Experiment

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See Unified Absolute Relativity Theory at:

<http://www.wbabin.net/saraiva/saraiva105.pdf>
<http://www.wbabin.net/saraiva/saraiva223.pdf>

Blue light in the air became longitudinal waves in silicon with speed higher than light.



Blue light -- $f_0 = 6.5 \times 10^{14}$; $x_0 = 460nm$; Silicon -- $n = 4$

$$\Delta v = \frac{n+1}{n-1} \frac{kf_0^2}{2c} = 2.247 \times 10^{-13}$$

$$f = f_0 \sqrt{\frac{2c}{\Delta v}} = 3.357 \times 10^{25} = 1.55 f_M$$

Or $f = 2f_M \sqrt{\frac{n-1}{n+1}}$; $w = 1.18c$

Time delay –

$$\Delta t = \frac{D}{c} - \frac{D}{w} = 0.1ns$$

Clock –

$$t = 0.01ns \Leftrightarrow f = 100GHz$$

Theory – Light speed from Lorentz equations:

$$w = c^2 \frac{w_0 - v}{c^2 - vw_0} ; \quad w_0 = c - \Delta w_0 ; \quad v = c - \Delta v$$

$$w = c \frac{\Delta v - \Delta w_0}{\Delta v + \Delta w_0} = \frac{c}{n} ; \quad n = \text{refractive index}$$

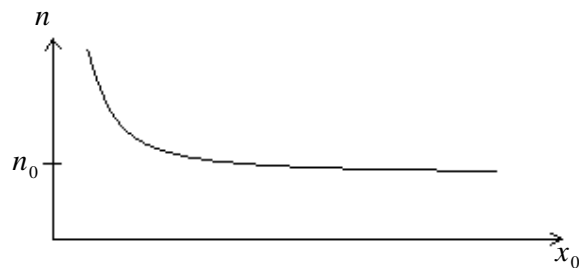
$$\Delta v = \frac{n+1}{n-1} \frac{kf_0^2}{2c}$$

Frequency from Lorentz equations:

$$f = \frac{cf_0 \sqrt{c^2 - v^2}}{c^2 - vw_0} \Leftrightarrow f = f_0 \sqrt{\frac{2c}{\Delta v}}$$

$$\Leftrightarrow f = 2 \frac{c}{\sqrt{k}} \sqrt{\frac{n-1}{n+1}} ; \quad \frac{c}{\sqrt{k}} = f_M = 2.167 \times 10^{25} \text{ Hz}$$

$$n = 5/3 = 1.67 \quad \Leftrightarrow \quad f = f_M ; \quad w = 0$$



$$n \approx n_0 + \frac{a}{x_0^2} ; \quad x_0 \text{ -- wavelength in the air}$$