

**From:** [Ivor Catt](#)  
**Sent:** Monday, November 11, 2013 11:51 AM  
**To:** [rosenstark@njit.edu](mailto:rosenstark@njit.edu)  
**Cc:** [Alex Yakovlev](#)  
**Subject:** Re: crosstalk

Dear Professor Sol Rosenstark,  
<http://www.electromagnetism.demon.co.uk/20136.htm>  
<http://www.electromagnetism.demon.co.uk/17136.htm>

re your book, Chapter 2, page 21;  
 “ .... a voltage wave of magnitude  $V$  starts propagating with speed  $v$  from left to right .... .  
 We know .... that the voltage wave is accompanied by a current wave .... ”

[http://www.ivorcatt.co.uk/4\\_1.htm](http://www.ivorcatt.co.uk/4_1.htm)

**Properties of a Transmission Line, or;  
 Proof that only one type of wave-front pattern can be propagated down a two-wire system<sup>u</sup>.**

Do you **now** know, what you did not know in 1994, that there is no such thing as a “voltage wave” or “current wave”? It is a single TEM wave. Voltage and current are always linked by  $Z_0$ , and cannot separate. No signal can travel down a transmission line except if voltage and current have  $v=iZ_0$ .

[http://www.ivorcatt.co.uk/1\\_2.htm](http://www.ivorcatt.co.uk/1_2.htm)

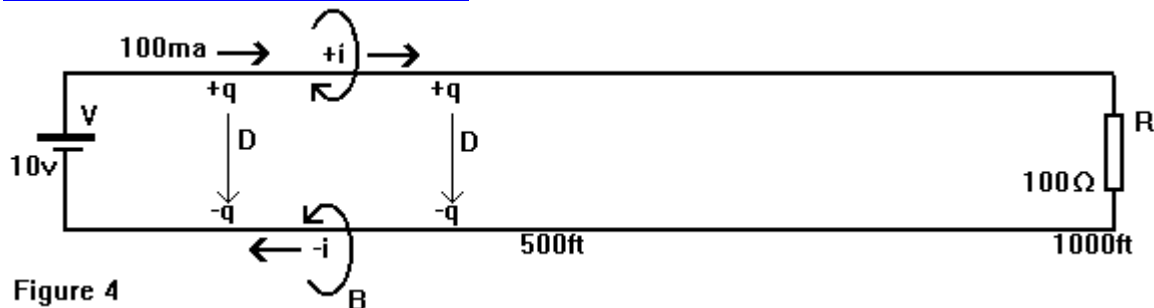


Figure 4

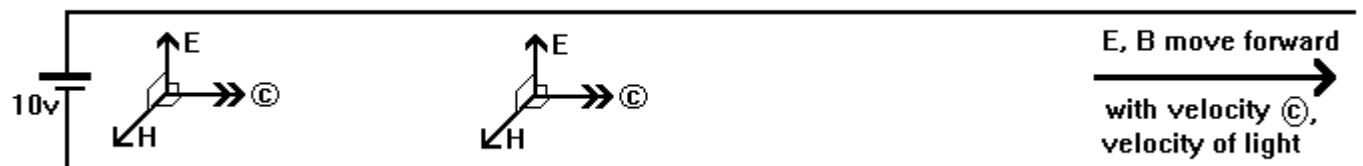


Figure 5

Ivor Catt

**From:** [Ivor Catt](#)  
**Sent:** Monday, November 11, 2013 11:17 AM  
**To:** [Alex Yakovlev](#)  
**Subject:** Fw: crosstalk

**From:** [Rosenstark, Solomon](#)

**Sent:** Monday, November 11, 2013 12:58 AM

**To:** [Ivor Catt](#)

**Subject:** Re: crosstalk

Nice work. Alas, I didn't know about it at the time. Had that been the case, then it would have my job easier.

On Sunday, November 10, 2013, Ivor Catt wrote:

<http://www.ivorcatt.org/x0311.jpg> says; "Past literature has been unsuccessful in explaining crosstalk between parallel wires above as ground plane, because it was assumed that only one signal propagation velocity was involved."

I suggest that even though this was published in the best relevant refereed journal 46 years ago and in a Macmillan book 34 years ago, it is still not known by book writers and those who write software to calculate crosstalk.

The easiest way to decide on crosstalk amplitude is not to do calculations, but to look up my graphs in the paper or the book.

Ivor Catt

**From:** [Ivor Catt](#)

**Sent:** Sunday, November 10, 2013 8:56 PM

**To:** [javascript: e\({}, 'cvml', 'rosenstark@njit.edu'\);](mailto:javascript: e({}, 'cvml', 'rosenstark@njit.edu');)

**Cc:** [Alex Yakovlev](#)

**Subject:** crosstalk

<http://web.njit.edu/~rosensta/>

Dear Professor Sol Rosenstark,

re Chapter 5 of your book "Transmission Lines in Computer Engineering", pub. McGraw-Hill 1994, you completely missed my IEEE 20pp 1967 paper "Crosstalk .... "

<http://www.ivorcatt.co.uk/x0305.htm> although you reference papers from 1988, 1965, 1990. I am sure you will agree that my discovery of the two modes and two velocities transformed the subject. It was repeated

<http://www.ivorcatt.org/digital-hardware-design.htm> in our 1979 book, 15 years before your 1994 book. The key pictures are at <http://www.ivorcatt.org/digihwdesignp57.htm> . My paper also has graphs for the amplitude of the crosstalk, which you lack.

Ivor Catt