

12/12/07

Optics Rotation:

LAB2 – The virtual femtosecond
laboratory

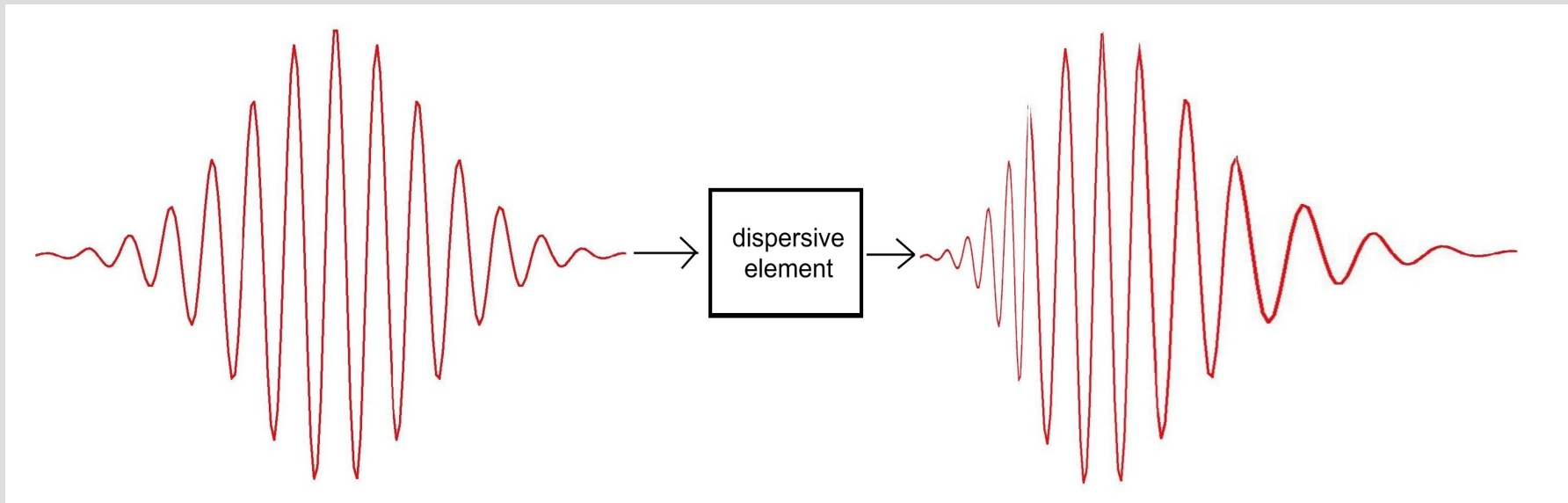
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LAB2 - Introduction

- Program package for the visual programming language LabVIEW (Laboratory Virtual Instrumentation Engineering Workbench)
- It was developed at the Institute for Optics and Quantum Electronics (IOQ) in Jena (Germany) in 1998
- Idea: Simulation of basic experiments which can be found in a typical femtosecond laser lab

LAB2 – First example

- First example: Gaussian pulse hits a dispersive element

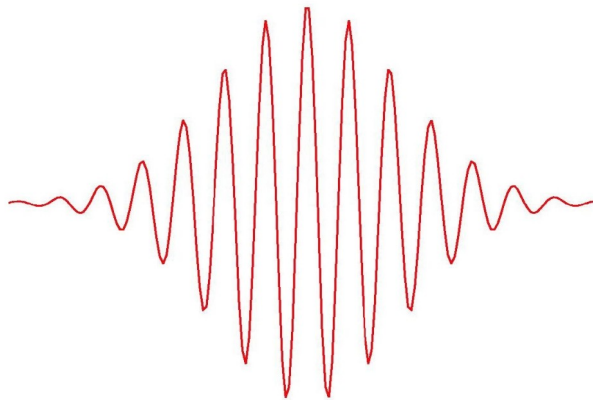


LAB2 – Second example

- It would be practical to have a Virtual Instrument in LabVIEW, which is able to read a pulse from a spreadsheet and to simulate it.

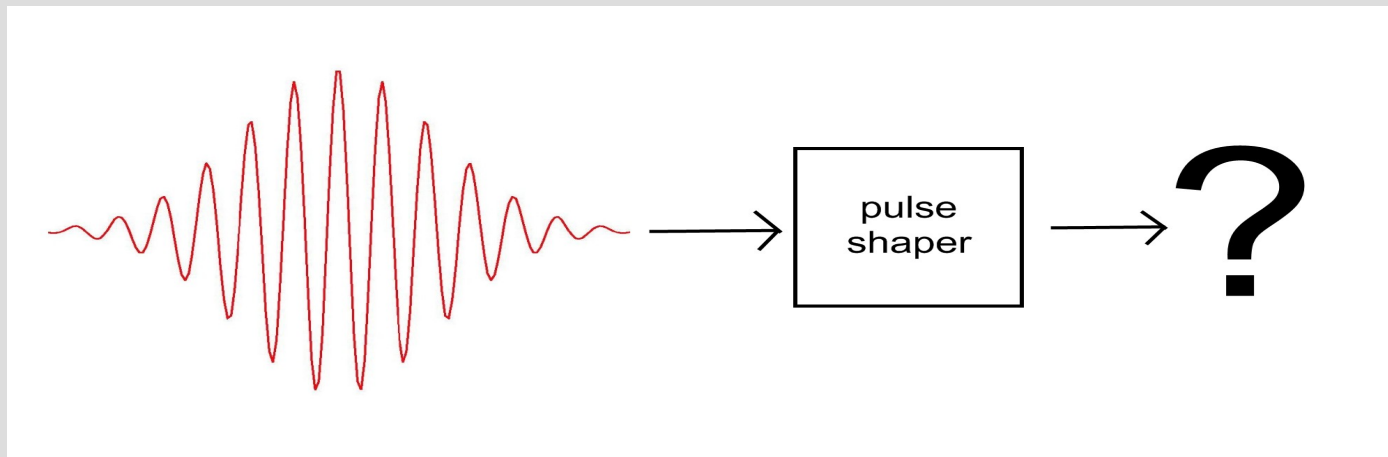
A	B	C	D	E
1	2	3	2	0
4	5	6	2	1
7	8	9	0	2
9	8	7	2	3
1	3	5	2	4

read &
simulate →



LAB2 – Third example

- A Gaussian pulse (or a simulated pulse from a spreadsheet) hits an ideal pulse shaper



- Another possibility is to use a Frog (Frequency Resolved Optical Gating)

Acknowledgement

Thank you for answering a lot of my questions:

Brendan, Ian, Tom and Uvo

Thank you for your attention!

LAB2 – Sources

- <http://www.lab2.de> (manual, etc.), 09 December 2007