10 MHz Distribution

- People Involved
- Test Configurations
- Results
- Conclusions

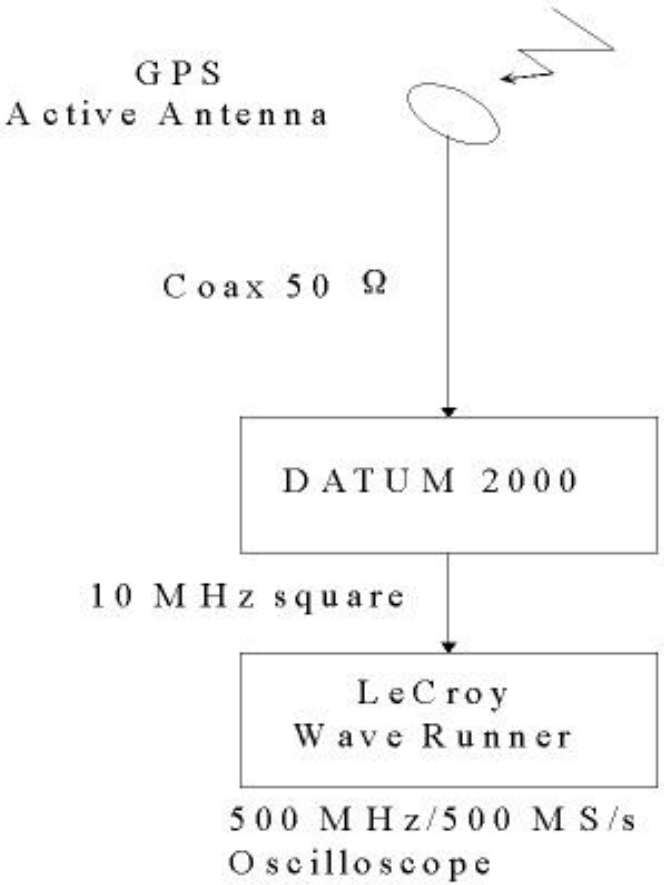
People Involved

- Christian Artfolk
- Gary Beetham
- Christoph Knaupp
- Julian Lewis
- Jean-Bernard Ribes

Test Configurations

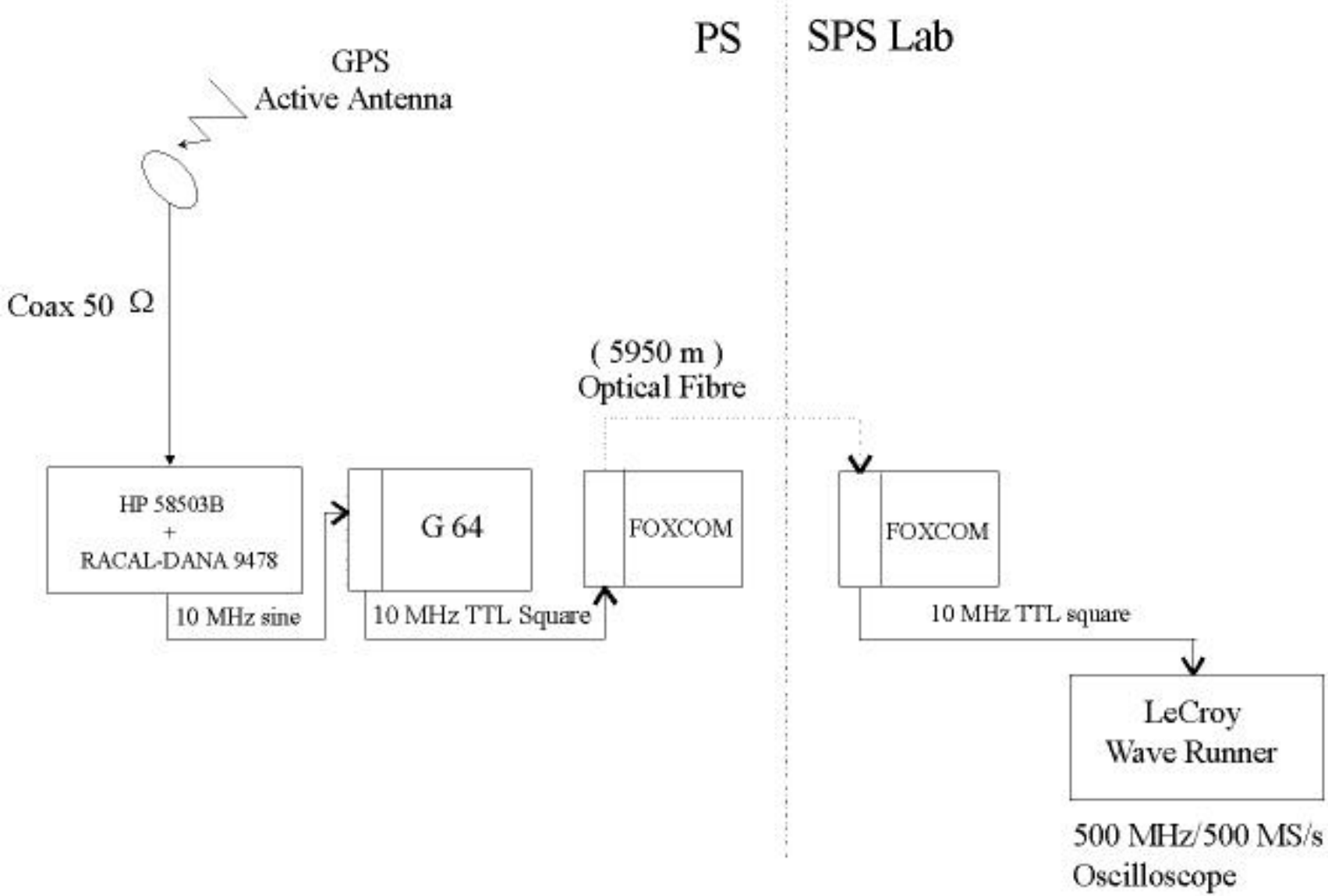
- Oscilloscope, Sine + Square Waves
- Datum Period, Sine + Square
- Datum Jitter, Square>Sine
- Datum + Optical Fibre
- Datum + Sine>TTL Converter
- Datum + S/TTL Converter + Optical Fibre
- PS + S/TTL +Optical Fibre Period
- PS > Datum GPS

SPS Lab



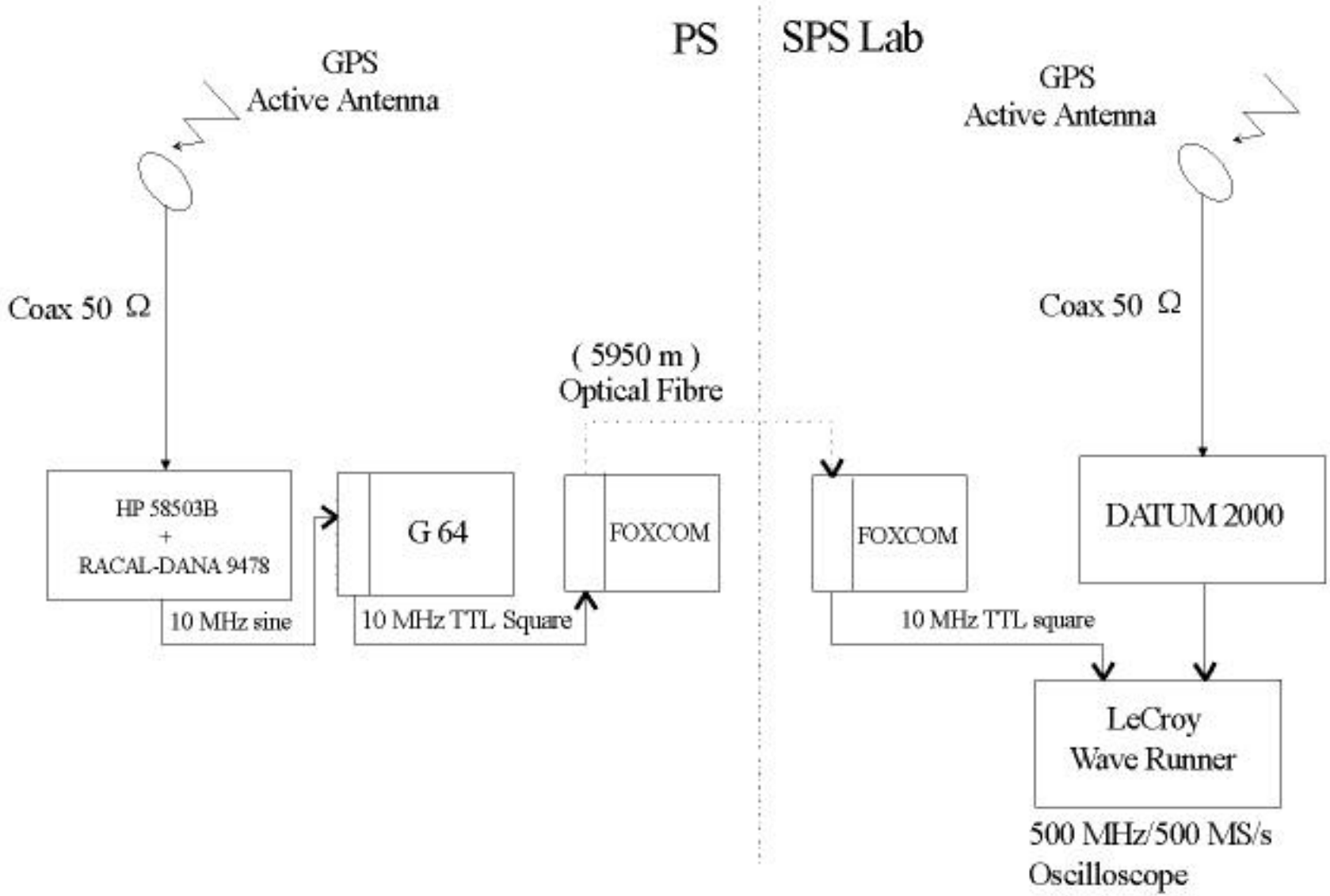
10 MHz Test 1

C.Antfolk 17/08.00 test1.dsf



10 MHz Test 2

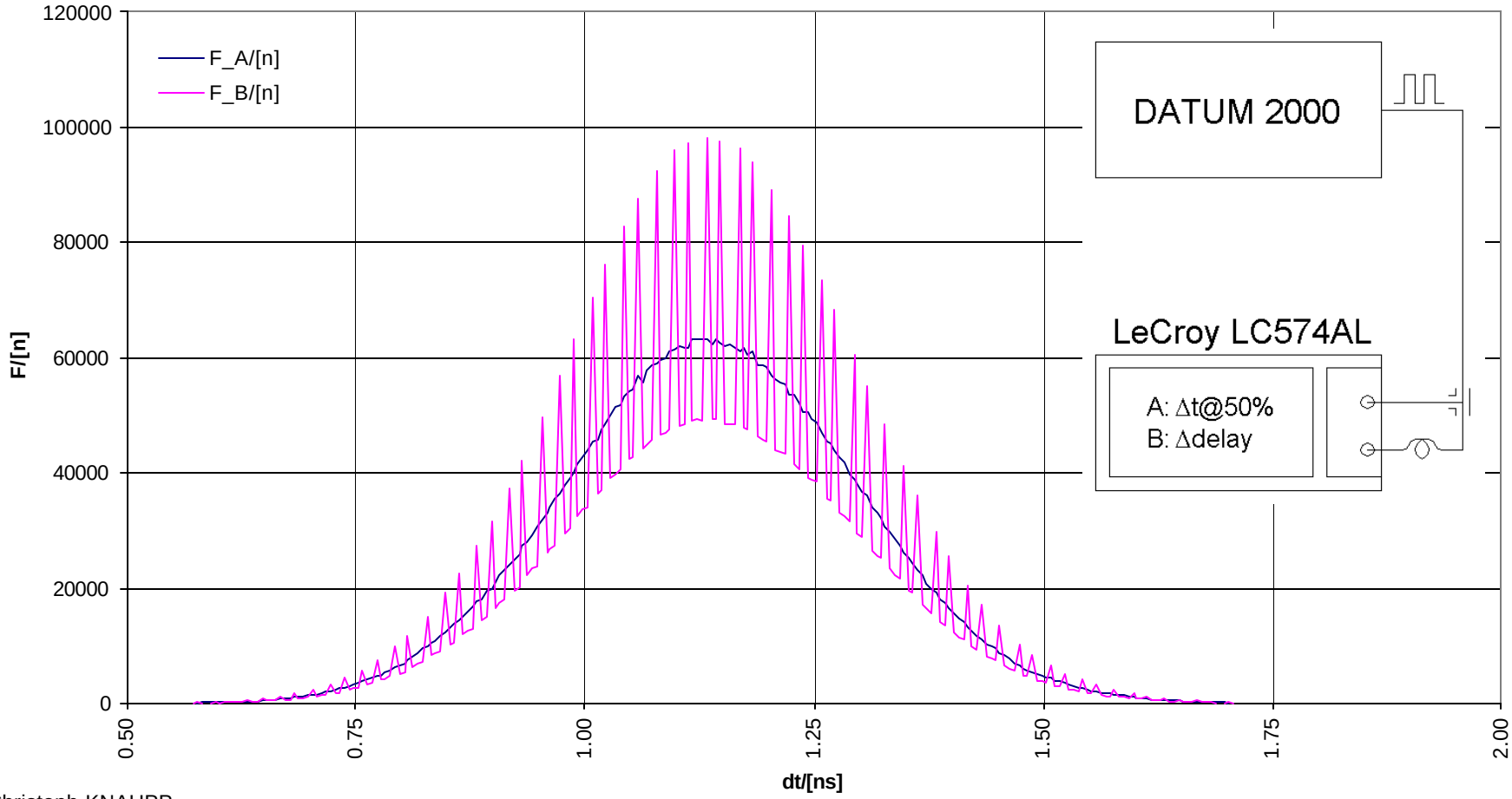
C.Antfolk 17/08.00 test2.dsf



10 MHz Test 3

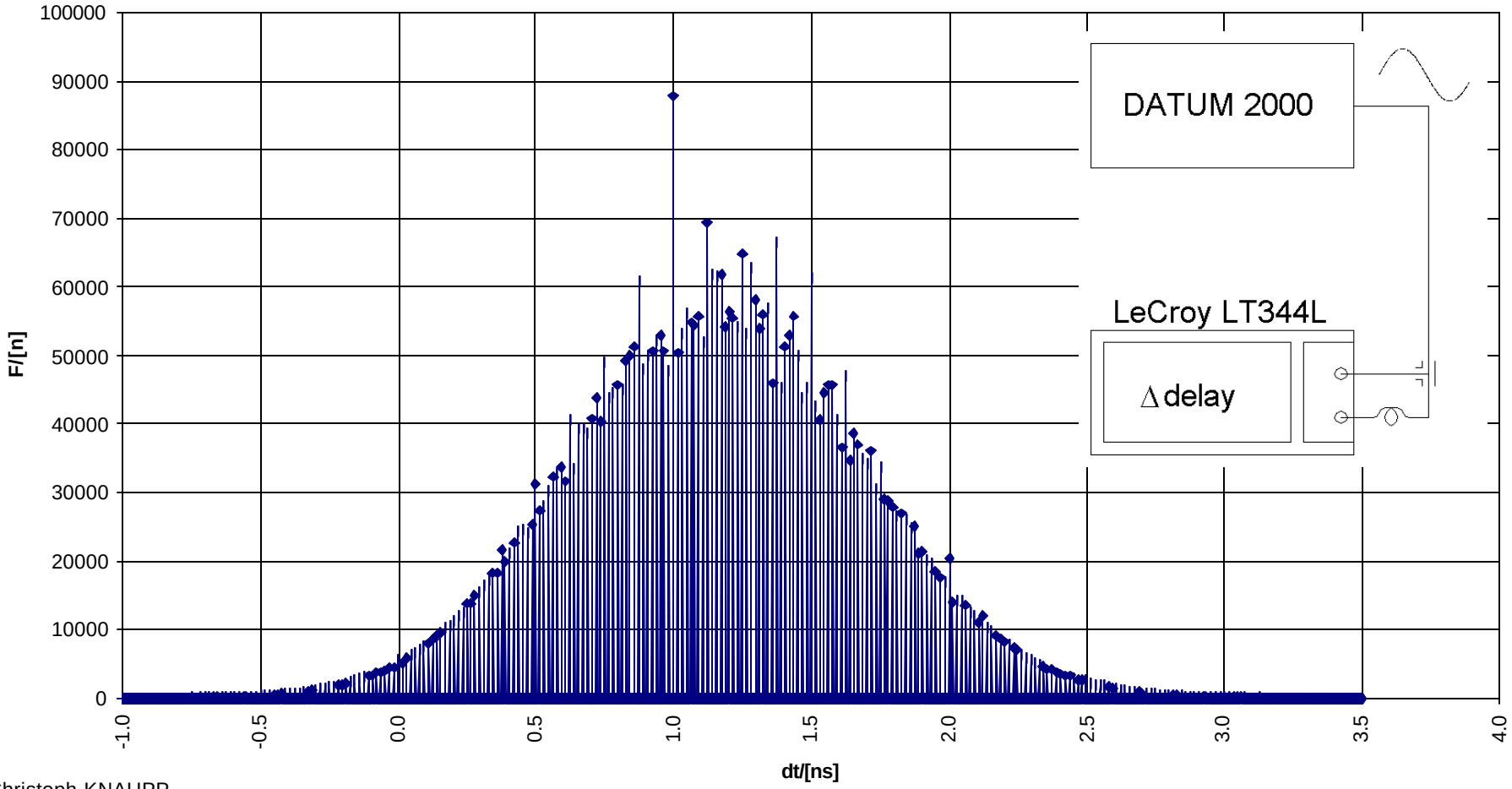
C.Antfolk 17/08.00 test3.dsf

A: Δt@50% (Datum Square) with constant delay between Ch1 to Ch2 of 1ns,
B: Δdelay (Datum Square) with constant delay between Ch1 to Ch2 of 1ns,
5M meas, 5ps bins, LeCroy LC574AL



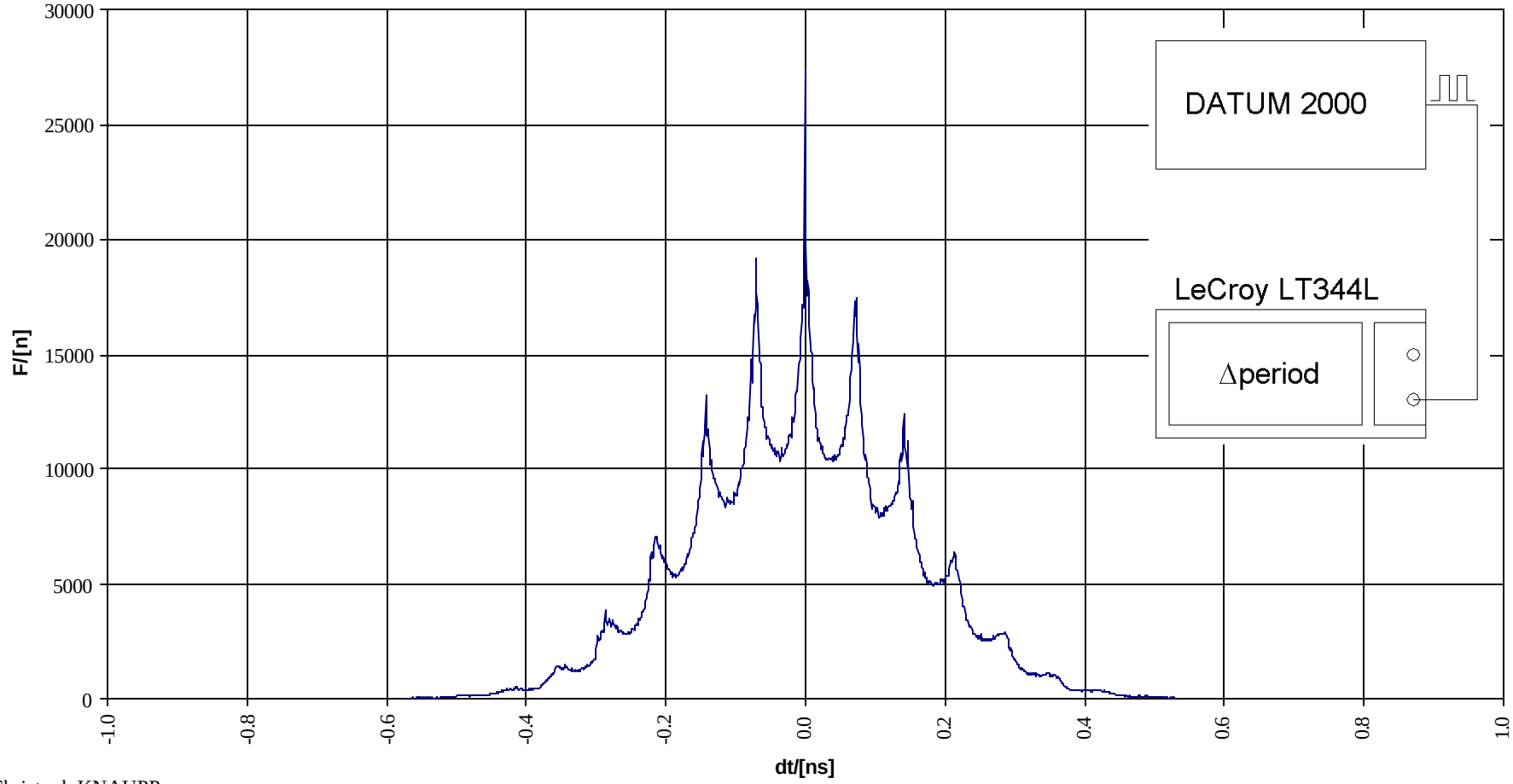
Christoph KNAUPP

Ddelay (Datum Sine) with constant delay between Ch1 to Ch2 of 1ns,
5M meas, 2.5ps bins, LeCroy LT344L



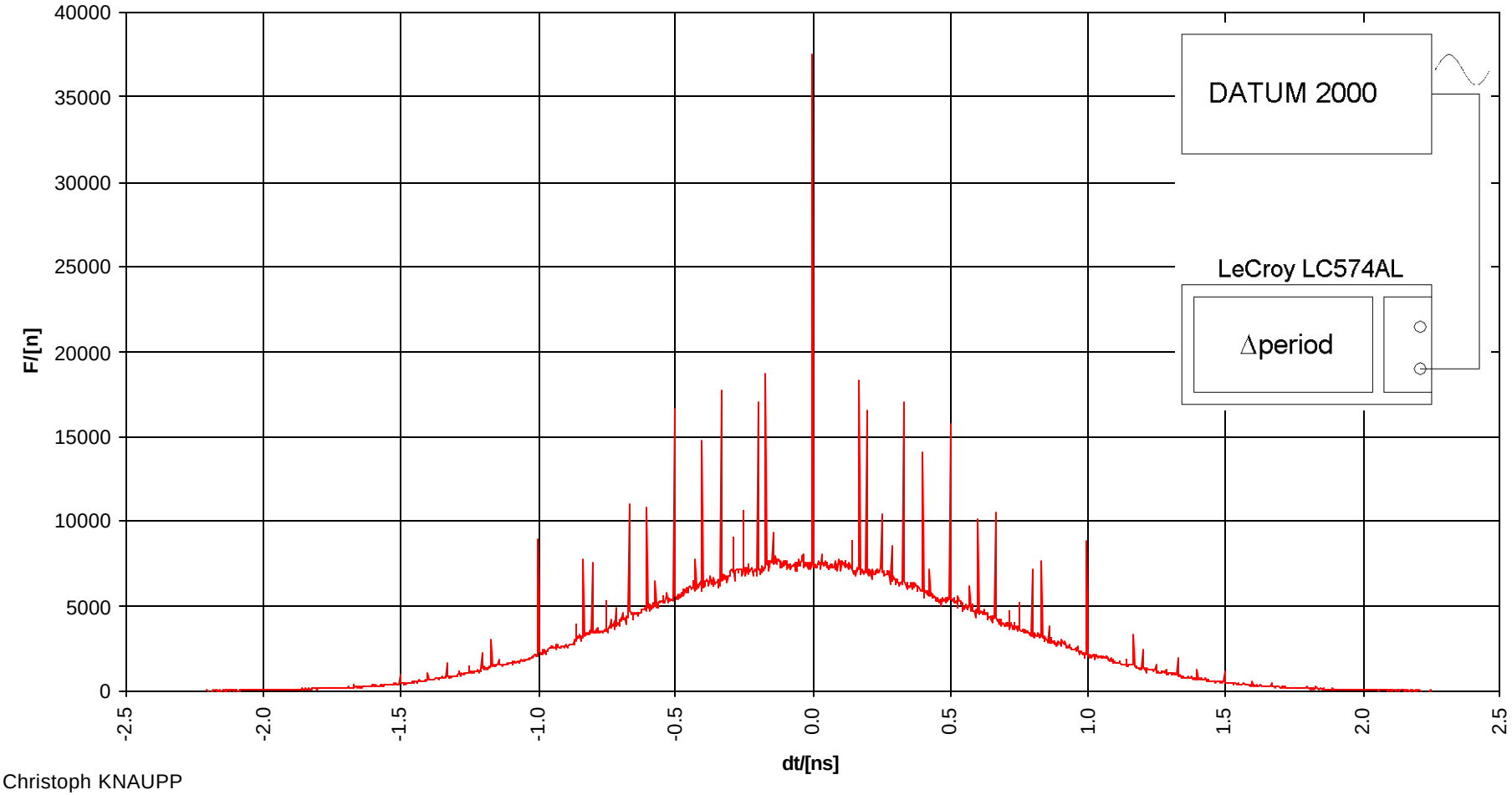
Christoph KNAUPP

D period (Datum Square) over 4 periods,
5M meas, 1ps bins, LeCroy LT344L



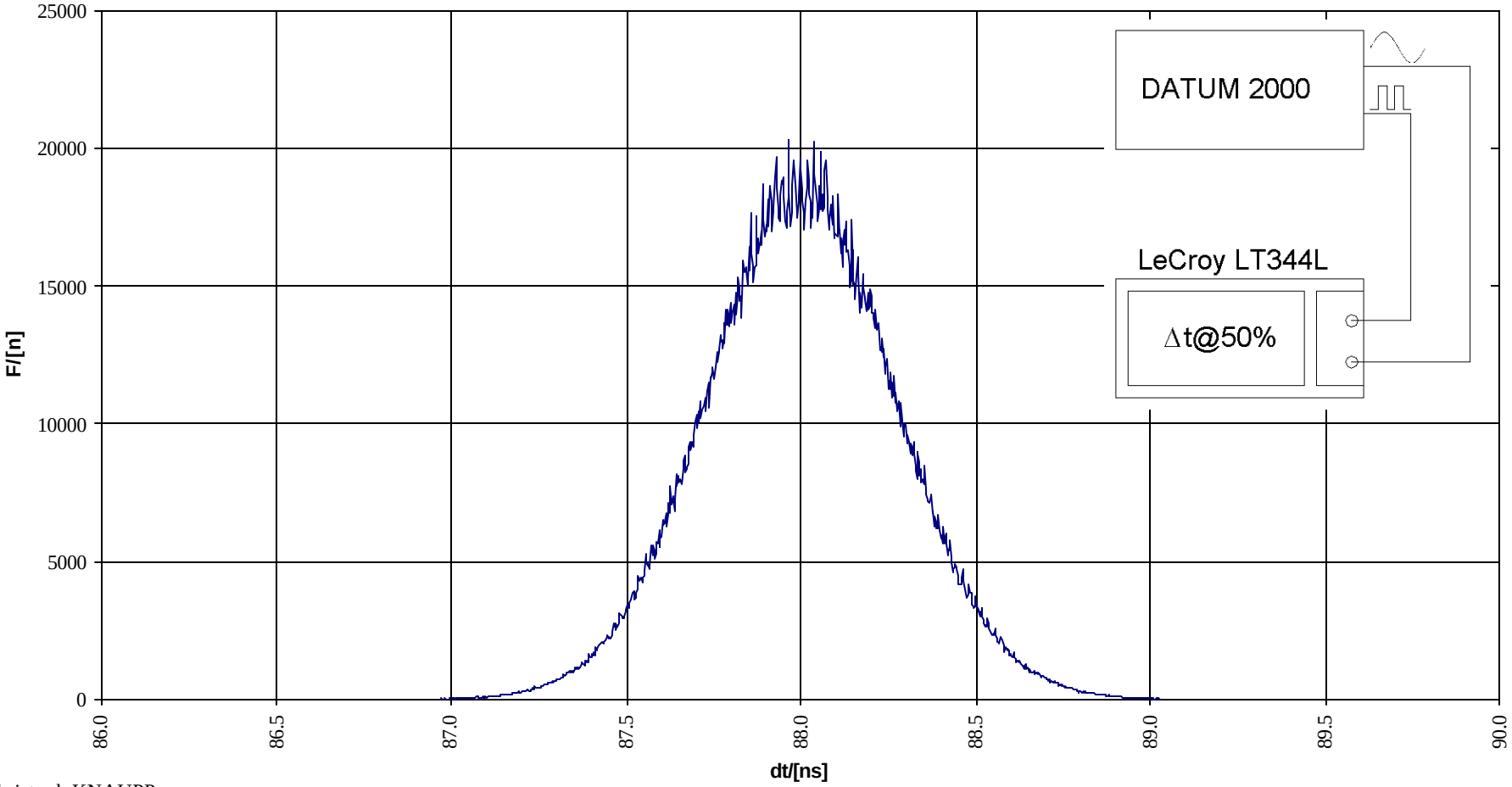
Christoph KNAUPP

Dperiod (Datum Sine) over 4 periods,
5M meas, 2.5ps bins, LeCroy LC574AL



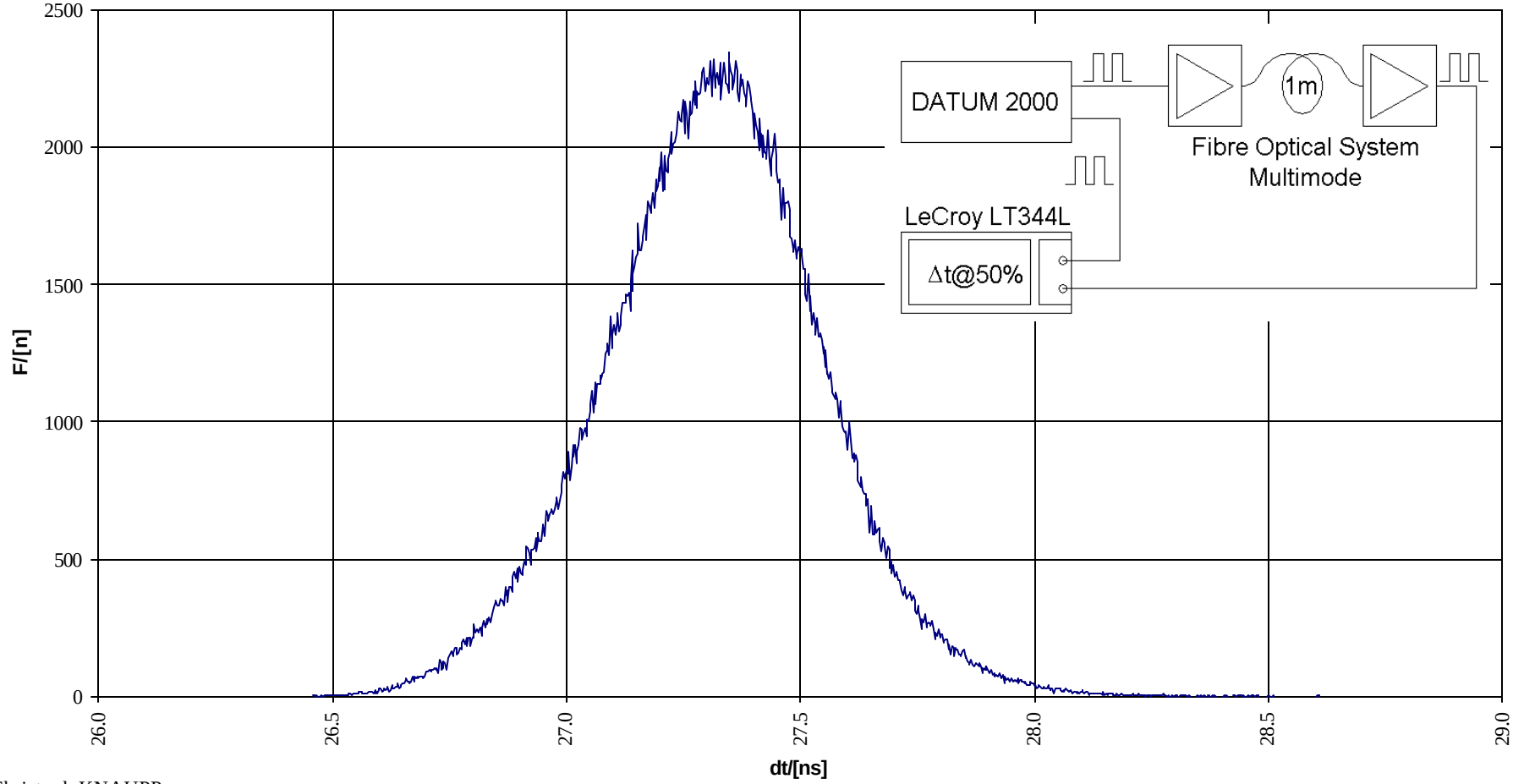
Christoph KNAUPP

Dt@50% (Datum Square) -> (Datum Sine),
5M meas, 2.5ps bins, LeCroy LT344L



Christoph KNAUPP

Dt@50% (Datum Square) -> (Datum Square + FibreOpticalSystem Multimode),
5M meas, 2.5ps bins, LeCroy LT344L



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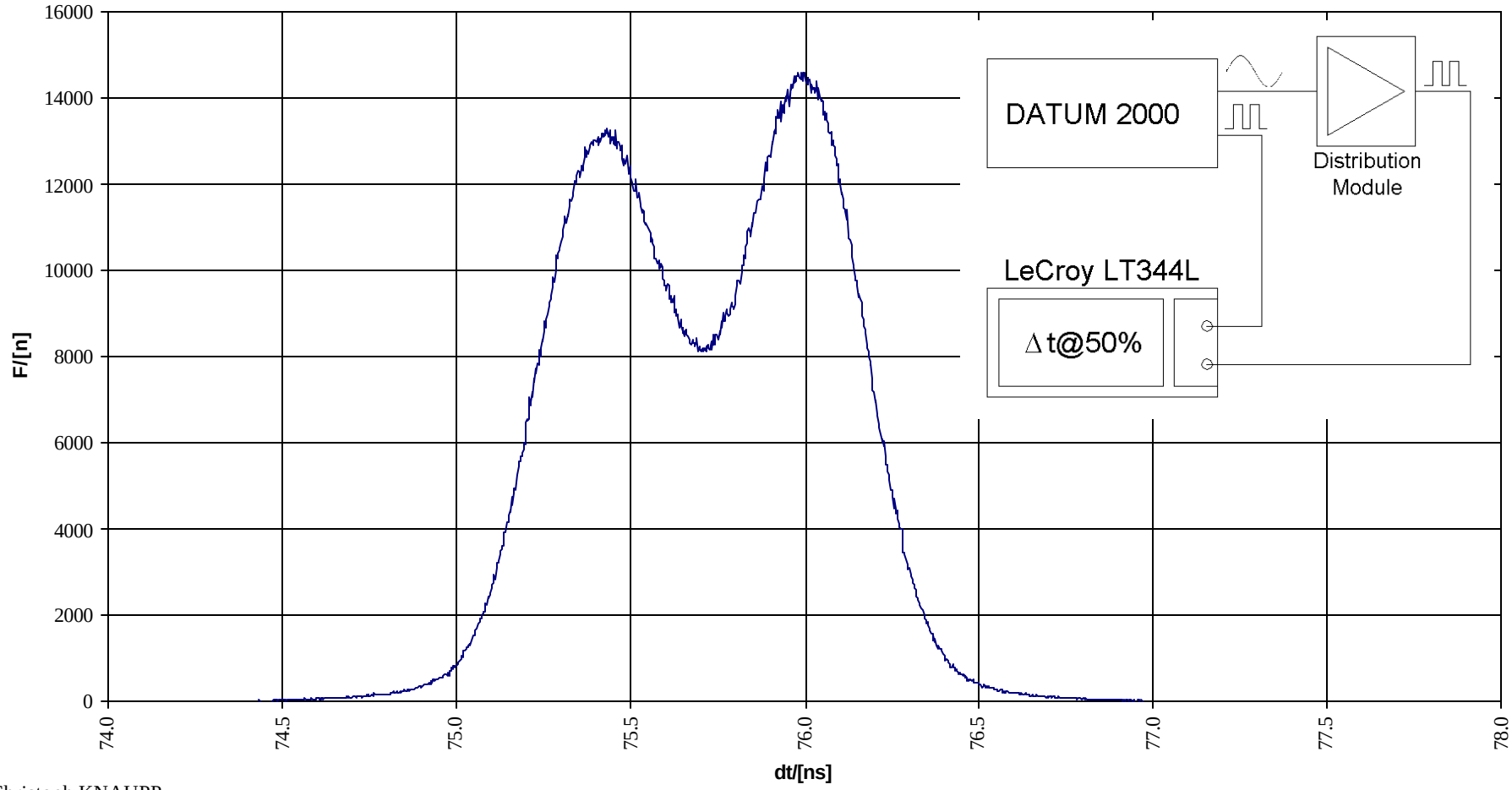
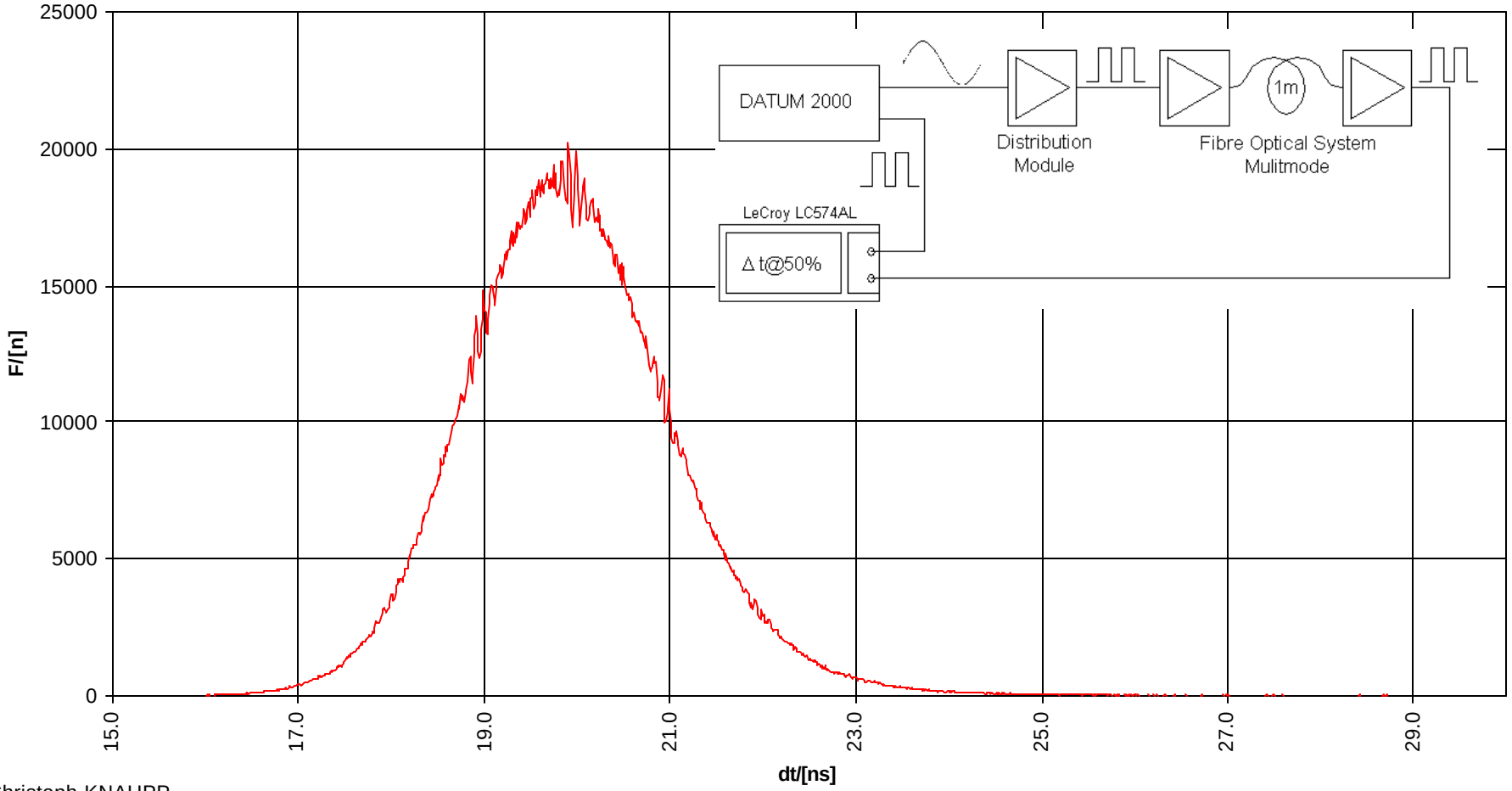
D t@50% (Datum Square) -> (Datum Sine + Distribution Module),
5M meas, 2.5ps bins, LeCroy LT344L



Christoph KNAUPP

Dt@50% (Datum Square) -> (Datum Sine + Distribution Module + FOS Multimode), 5M meas, 10ps bins, LeCroy LC574AL



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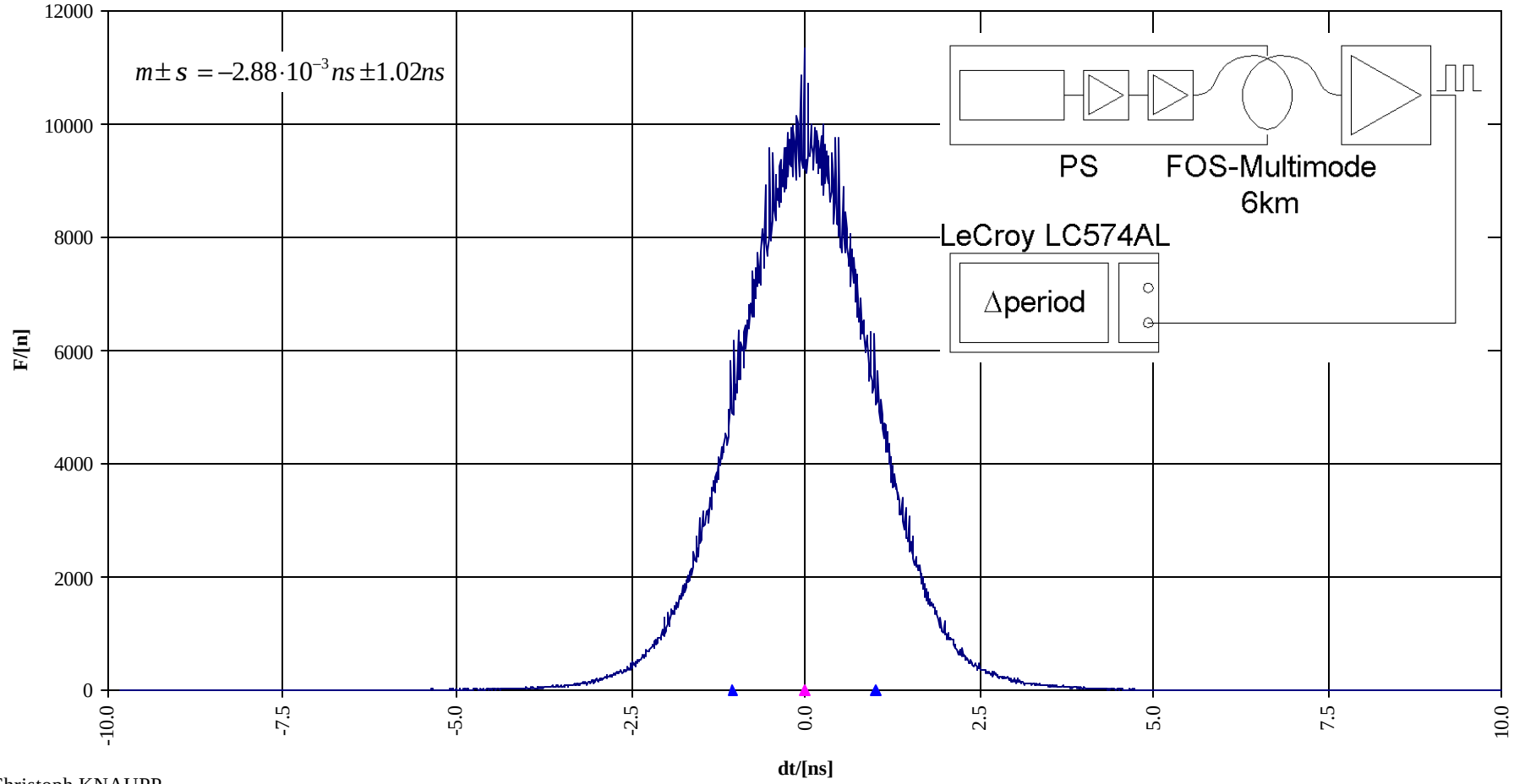
D period (PS Square) over 4 periods,
2M meas, 10ps bins, LeCroy LC574AL



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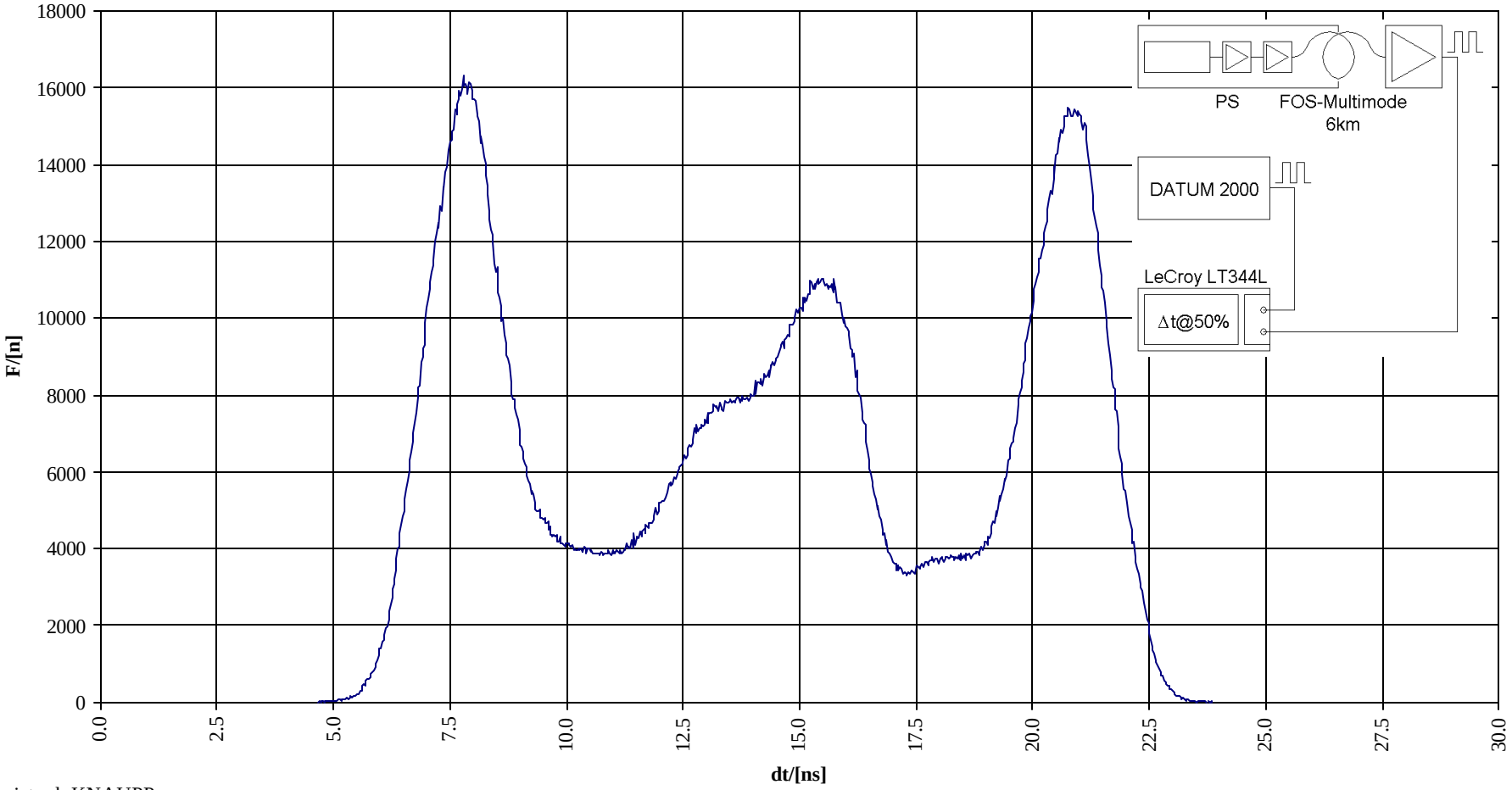
Dt@50% (Datum Square) -> (PS Square),
5M meas, 25ps bins, LeCroy LT344L



Christoph KNAUPP

Conclusions

- 10 MHz can be transmitted from the PS to SL Faraday Gage in BA3.
- Transmitted over 6Km multi-mode fibre. $\sigma = 1.02\text{ns}$
- GPS synchronisation requires more investigation