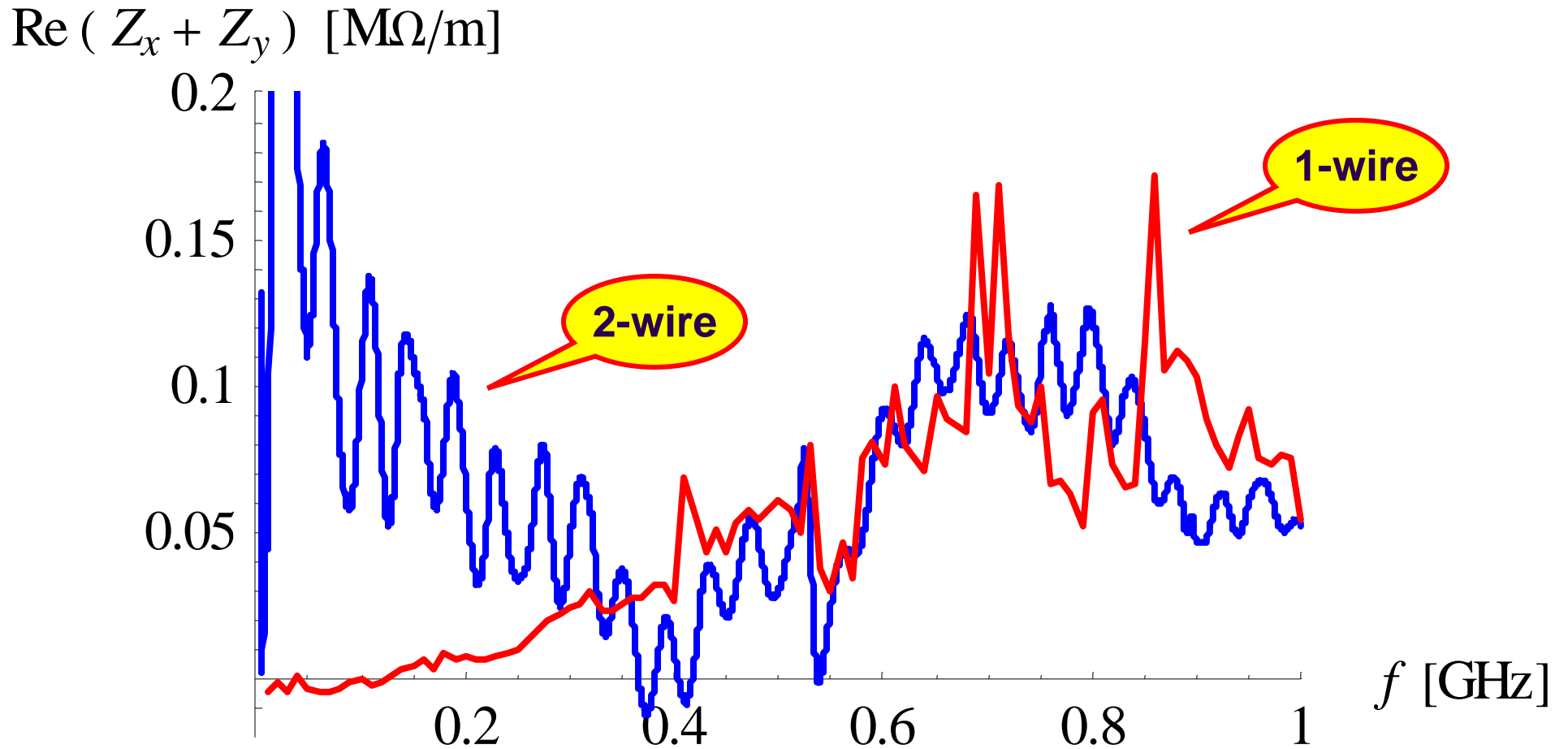


# IMPEDANCE OF PS KICKERS FOR THE NEW CT: COMPARISON BETWEEN 1 AND 2 WIRE MEASUREMENTS & FIRST PS IMPEDANCE ESTIMATE

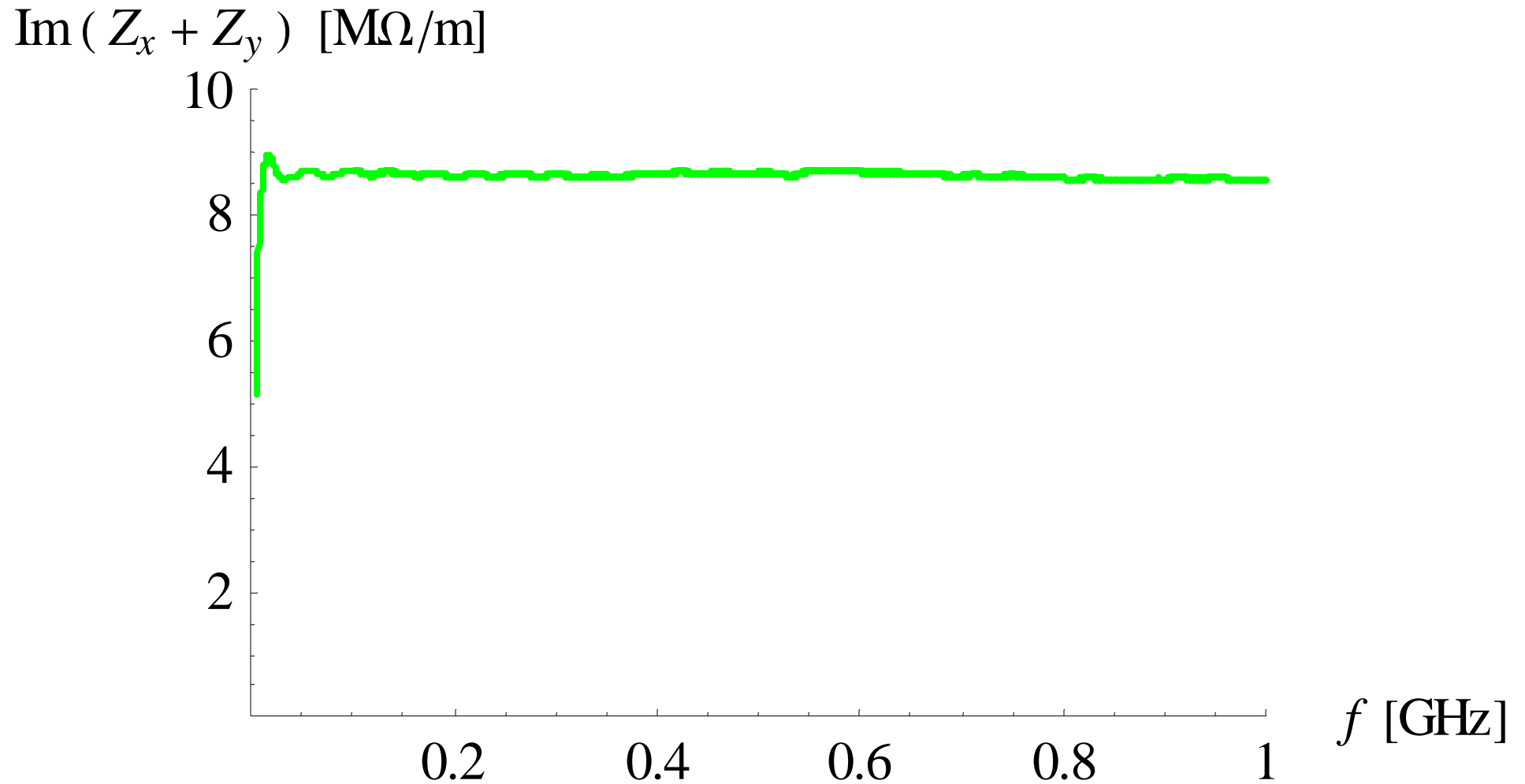
Elias Métral

- ◆ **Action** was: “Tentative conclusion for PS kicker impedance limiting cases” ⇒ **Done, see my APC talk (08/12/05)**
- ◆ **New results since the APC**
  - 2 wire measurements data provided by Fritz and Tom just after the APC ⇒ Comparison with 1 wire
  - First PS impedance estimate made (KFA45 + KFA71/79)

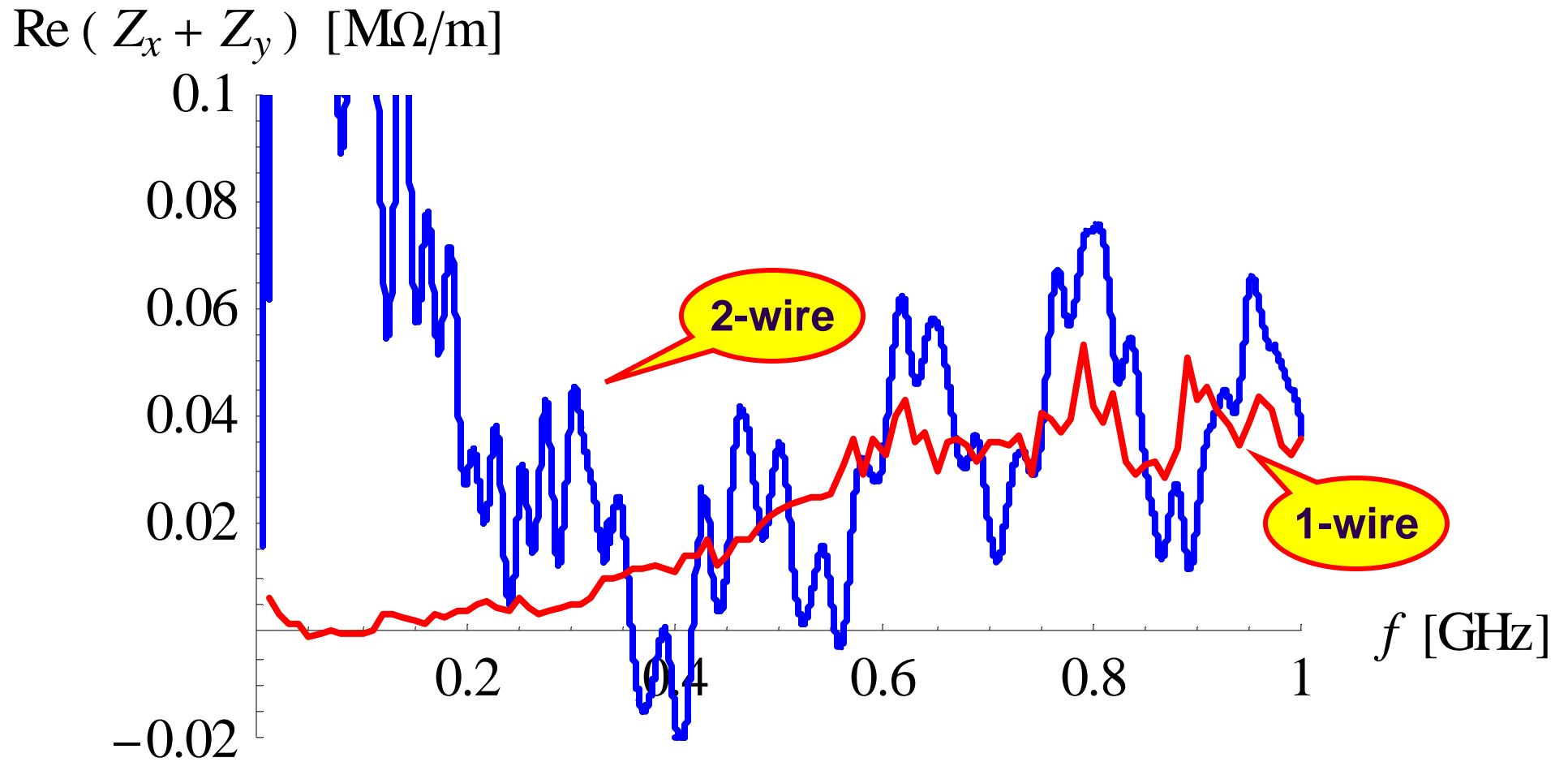
# Kicker 1 $\Rightarrow$ Measured horizontal + vertical driving impedances



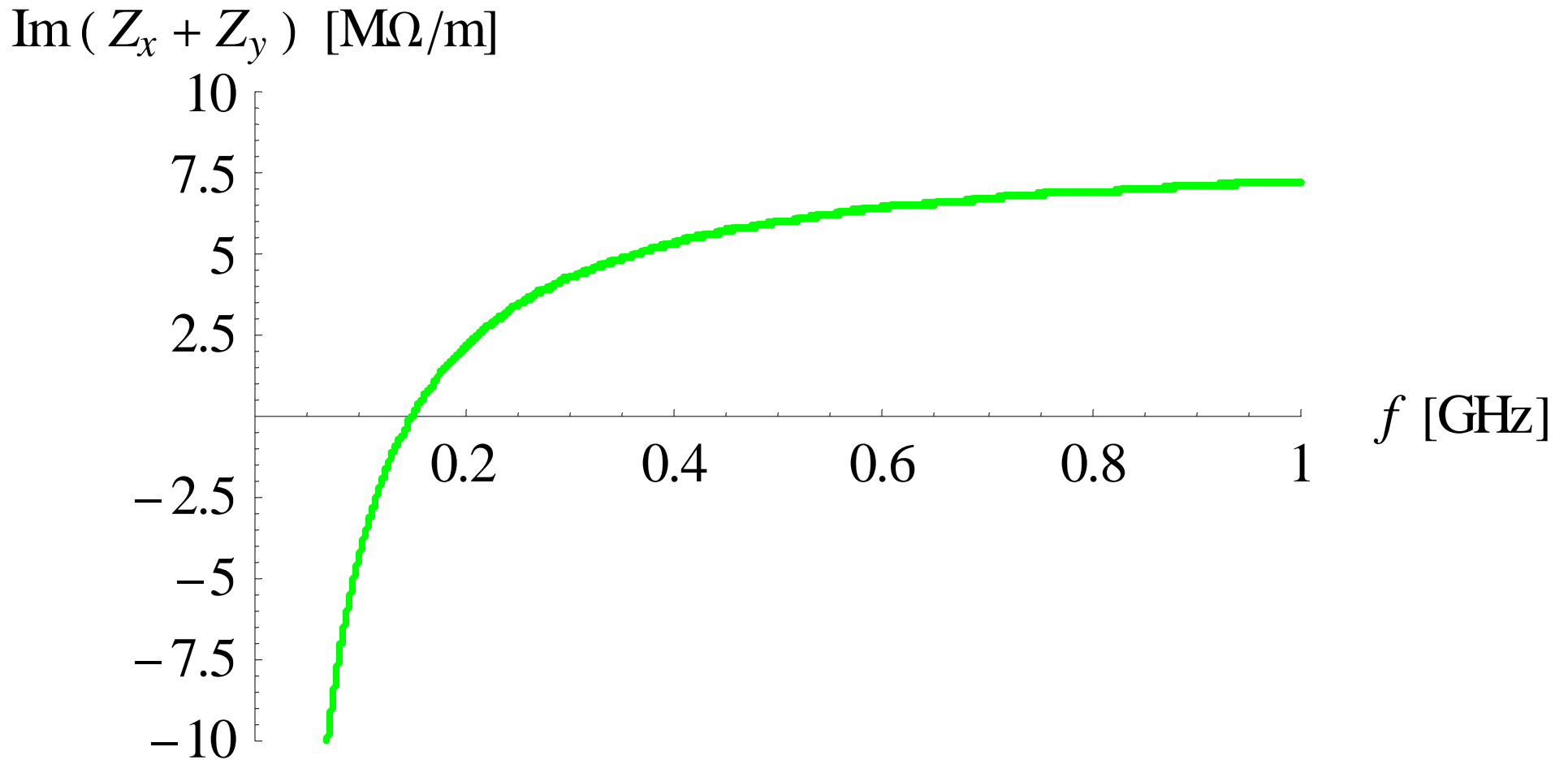
**Kicker 1  $\Rightarrow$  The sum of the imaginary parts is much larger with the 2 wires (only shown here)**



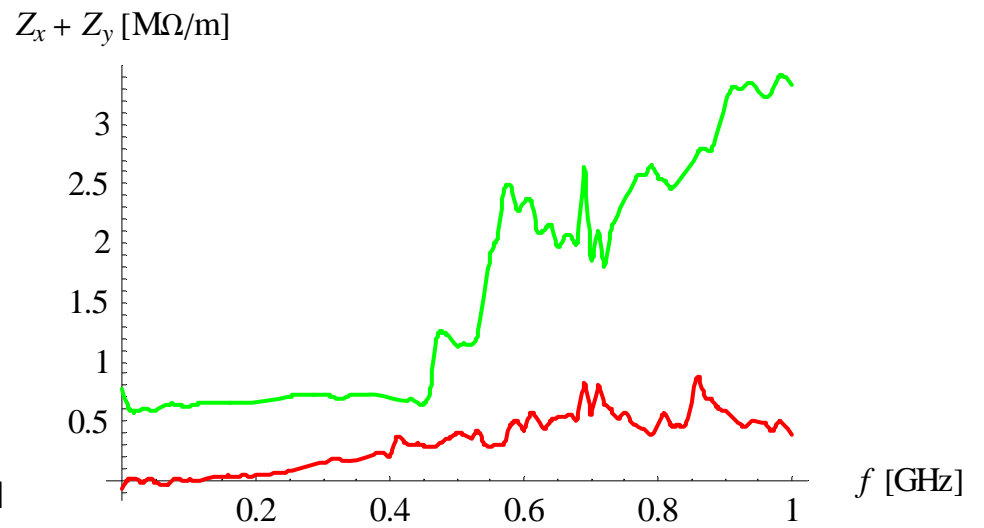
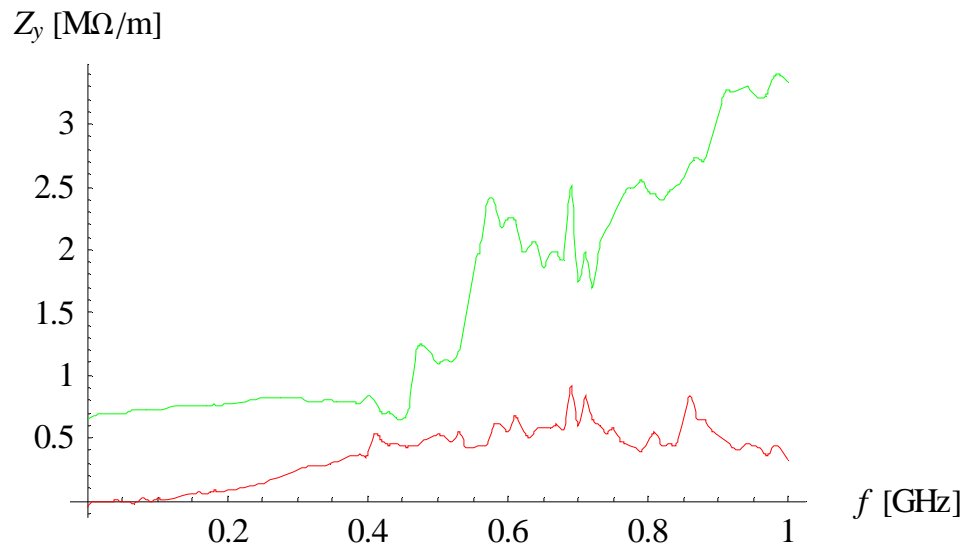
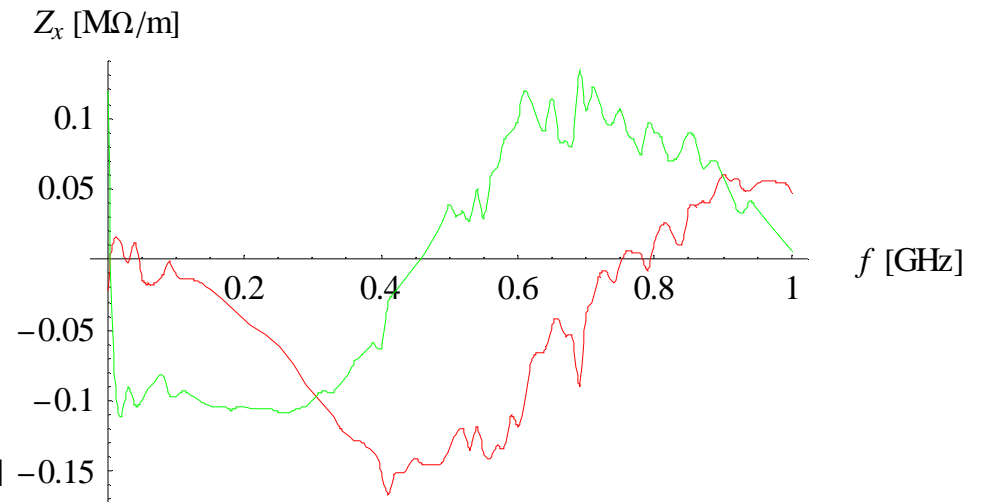
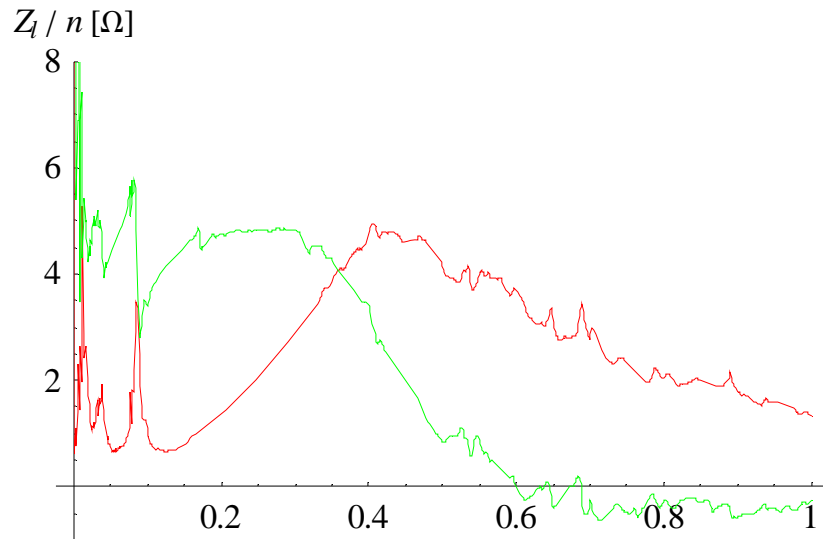
# Kicker 2 $\Rightarrow$ Measured horizontal + vertical driving impedances



**Kicker 2  $\Rightarrow$  The sum of the imaginary parts is much larger with the 2 wires (only shown here)**



# First PS impedance estimate with KFA45 and KFA71/79



## Conclusion

- ◆ **Good agreement between the 1 and 2 wire measurements between ~ 400 MHz and 1 GHz for the real part of the impedance**
- ◆ **Note that these are not straightforward measurements  $\Rightarrow$  Errors expected at low frequency with 2 wires due to the  $1/f$  term**
- ◆ **The oscillation observed on the blue curve (2 wire method) is due to the residual mismatch**
- ◆ **The low-frequency part (of the real part of the impedance) and the imaginary part still have to be analyzed in detail for the 2 wires**
- ◆ **Concerning the PS impedance estimate, one now has to add the contributions from the BFA9/21 and KFA28. Can we measure them?**
- ◆ **Next step: HFSS simulations to study the effect of the kicker length (before EPAC06)**