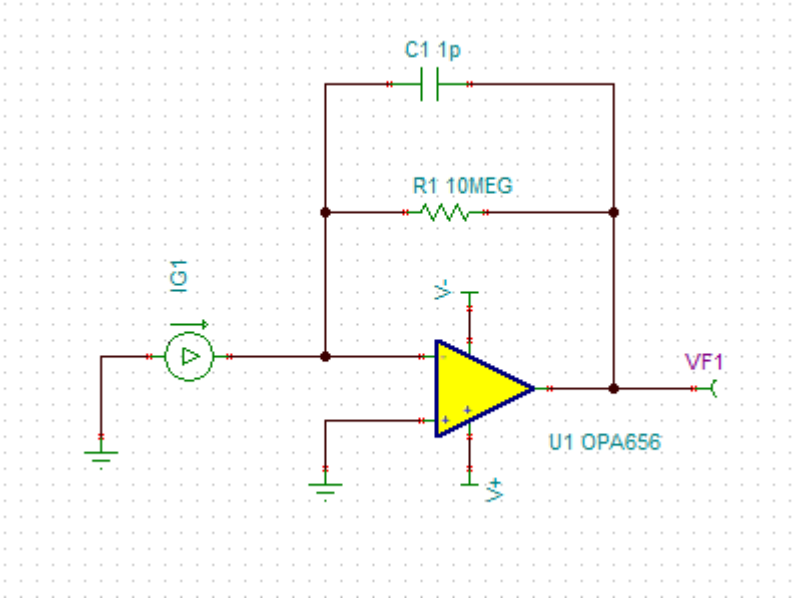
Transimpedance Amplifier Noise calculation

I want to calculate the total output noise voltage of the op amp based transimpedance amplifier

I assume a simple, single stage TIA (with R_F and C_F) with OPA656 for calculation purposes



The parameters are

Opamp GBW product – 230 MHz
Input noise voltage – 7 nV/√Hz
Input current noise – 1.3 fA/√Hz
Common mode capacitance – 0.7 pF
Differential mode capacitance – 2.8 pF

Assume,

Source capacitance – 28 pF

Assume PCB parasitic capacitance - 0.5 pF

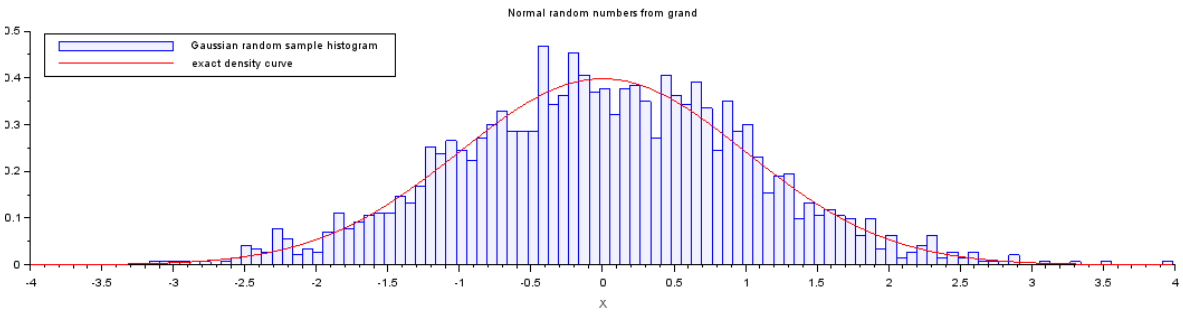
Total capacitance at inverting node of op amp – 32 pF

Assume R_F – 10 MΩ

C_F = 1 pF

Given this scenario,

(a) I want to calculate the output rms noise voltage and plot the graph of histogram and pdf of noise like this



How do I calculate the output rms noise voltage?

I went through two presentations from Texas Instruments "Simple Transimpedance Designs Using High Speed Op Amps" (Kindly see the attachment) and High Speed Transimpedance Amplifier Design Flow (https://training.ti.com/high-speed-transimpedence-amplifier-design-flow)

(I've attached these two files)

- Noise due to amplifier voltage noise: The amplifier voltage noise density at the output appears at the output with gain 1 V/V. Therefore it is 7 nV/√Hz
- Noise due to amplifier current noise: The amplifier current noise density is multiplied by the R_F, 1.3 fA * 10 M = 13 nV/√Hz
- Noise due to feedback resistor: $\sqrt{(1.6 * 10^{-21} * 10\ M)} = 260$ nV/√Hz
- Noise due to the amplifier's voltage noise and the noise gain shape:
  7 nV/√Hz * 20 $\log_{10}$ (1 + C_{TOT}/C_F) = 7 nV/√Hz * 20 $\log_{10}$ (1 + 32 p/1 p) =
  7 nV/√Hz * 20 $\log_{10}$ (33) = 7 nV/√Hz * 30 = 210 nV/√Hz
  Total noise voltage at the output = $\sqrt{((7\ n)^2 + (13\ n)^2 + (260\ n)^2 + (210\ n)^2)}$ / √Hz
  = √(49 + 169 + 67600 + 44100) nV/ √Hz

  Total output noise voltage= 334 nV/ √Hz

  For the bandwidth of $1/ 2\pi R_F C_F = 1/2\pi * 10\ M * 1p$
  = 16 k Hz approx..

  Total noise voltage for 16 kHz bandwidth = 334 nV * 15 kHz = 5.344 mV_{rms}

  Whether my calculation is correct??
  Kindly clarify