

Circuit Simulation Project

<https://esim.fossee.in/circuit-simulation-project>

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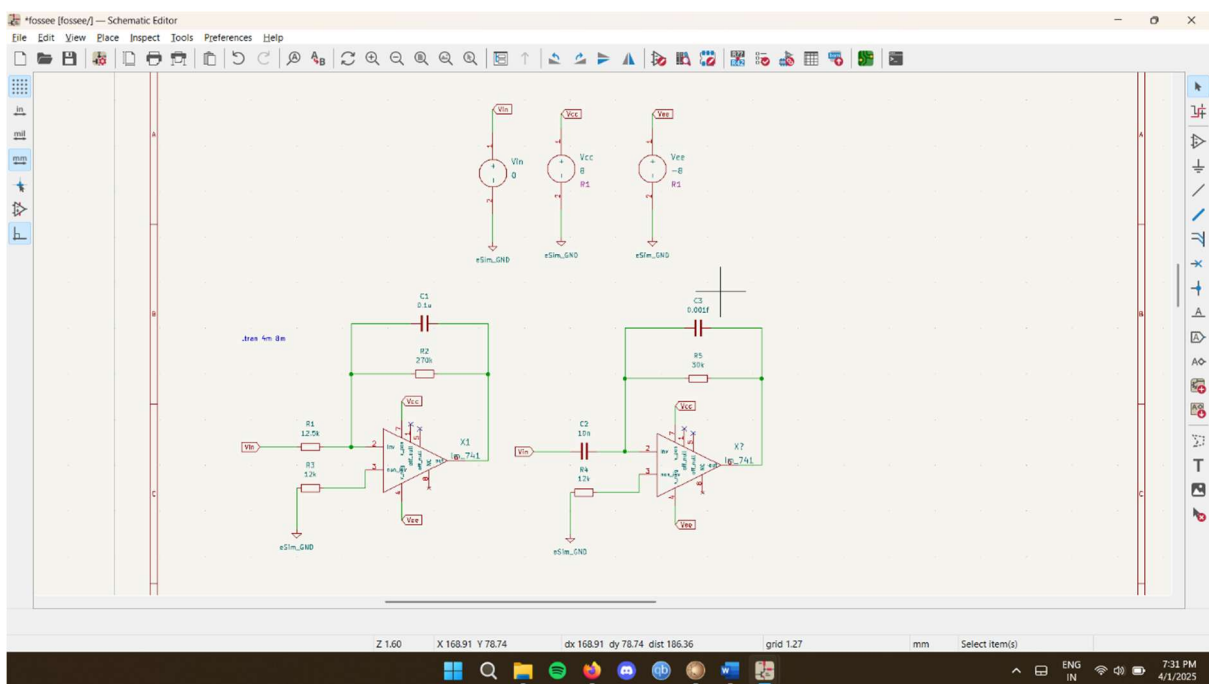
Title of the circuit : Design of Integrator and Differentiator Circuit Using LM741 Op-Amp

Theory/Description : The LM741 is a general purpose op-amp that can be configured as an integrator or differentiator utilizing passive components such as resistors and capacitors.

An integrator circuit performs an integration function, meaning it produces an output proportional to the integral of the input signal.

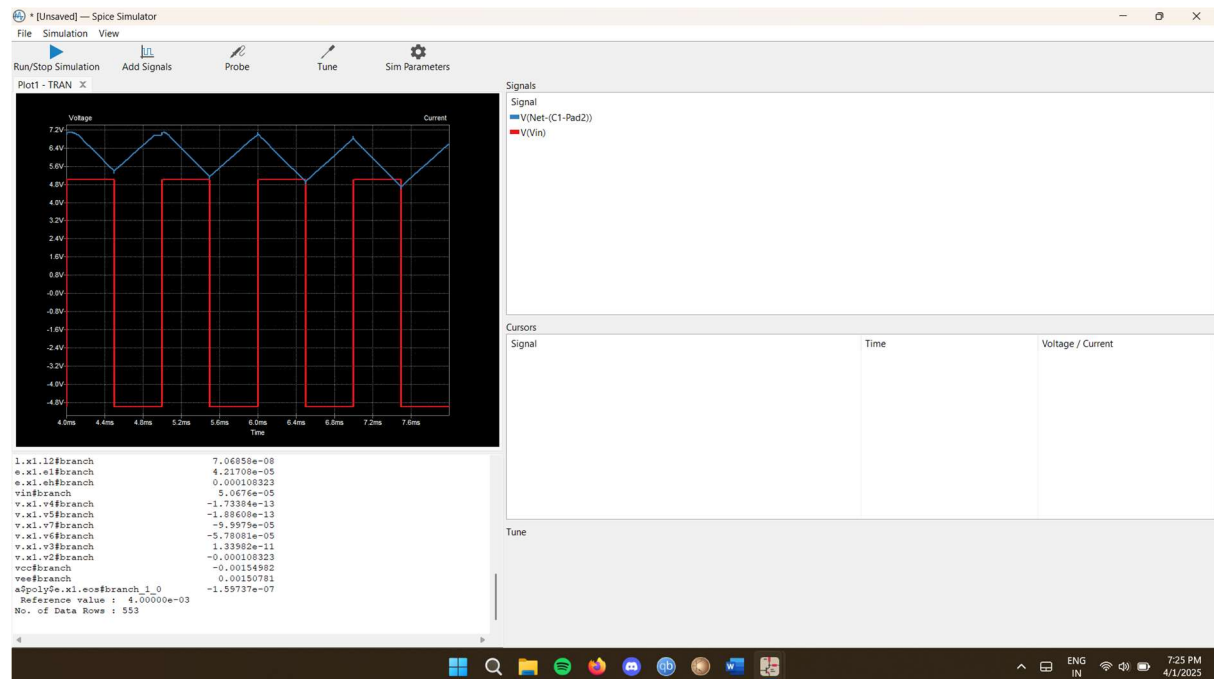
A differentiator circuit produces an output voltage proportional to the time derivative of the input signal.

Circuit Diagram(s) :

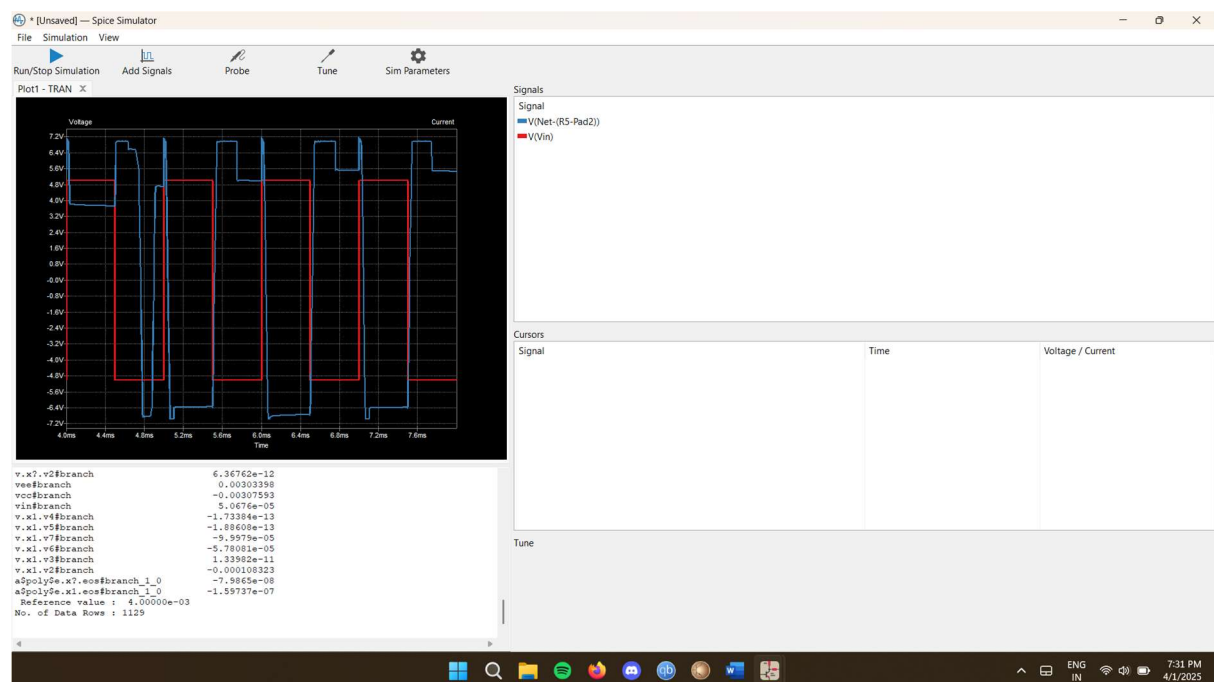


Results (Input, Output waveforms and/or Multimeter readings) :

Output of Integrator (blue) vs Input Voltage (red):



Output of Differentiator (blue) vs Input Voltage (red):



Source/Reference(s) :

Tsirimokou, G., Psychalinos, C. Ultra-low voltage fractional-order differentiator and integrator topologies: an application for handling noisy ECGs. *Analog Integr Circ Sig Process* 81, 393–405 (2014)