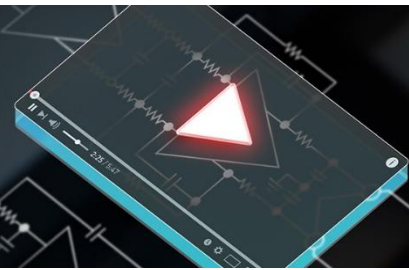


# TI Precision Labs

Seminar 2024



View locations and [register online](#)

8:30 – 9:00 a.m.	<b>Check-in and registration</b>
9:00 – 9:30 a.m.	<b>Introduction, tools, new devices</b> An overview of TI's broad amplifier portfolio, the tools used for selection and analysis and new devices.
9:30 – 10:30 a.m.	<b>Amplifier fundamentals and specifications</b> This session gives guidance on how to predict error due to $V_{os}$ , $I_b$ , and temperature drift, as well as the internal origin of these error sources. Dynamic behavior overview with $I_q$ , slew rate and bandwidth are reviewed. A discussion on data sheet parameter specifications is given.
10:30 – 10:40 a.m.	<b>Coffee break</b>
10:40 – 11:50 a.m.	<b>Advanced amplifiers technologies</b> A general overview is given focusing on the difference between CMOS, Bipolar, and JFET amplifiers. Modern amplifier technology improvements such as zero-crossover and zero-drift are introduced. Basic process differences are discussed as they relate to amplifier performance.
11:50 a.m. – 1:00 p.m.	<b>Lunch</b>
1:00 – 2:10 p.m.	<b>Input voltage noise, input current noise and filtering techniques</b> Amplifier and resistor noise are predicted with calculation and simulation. Noise gain, noise bandwidth, current and voltage noise spectral density, and total RMS noise are defined. Flicker and broadband noise are explained. Real world measurements are compared to calculations.
2:10 – 2:20 p.m.	<b>Coffee break</b>
2:20 – 3:30 p.m.	<b>Circuit stability analysis and compensation schemes</b> Driving a capacitive load or having excessive capacitance on the op amp's inverting node may lead to oscillations. This presentation shows how amplifier stability can be predicted using simulation and discuss the methods for correcting the issue.
3:30 – 3:40 p.m.	<b>Coffee break</b>
3:40 – 4:40 p.m.	<b>Comparator applications</b> A general overview is given focusing on the fundamental operation of comparators. Topics include explanations of specifications specific to comparators, the different types and options for comparators, and common customer application issues.

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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265  
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