

Sean Dwyer

Electrical & Computer Engineering

Year in School: Senior

Hometown: St. Peters, Mo.

Faculty Mentor: Dr. Scott Kovaleski, Electrical & Computer Engineering

Funding Source: College of Engineering Undergraduate Research Option

Linearity testing of LED transmitter and corresponding voltage to current op-amp configuration

Sean Dwyer & Scott Kovaleski

The LM7171 operational amplifier is made for high electrostatic discharge and fast signal performance. In a configuration using the diode in the transmitter and a resistor on the negative op-amp terminal, the op amp will convert the voltage measurement to a current value, which will then be sent linearly via the HFBR-1414MZ optical transmitter over optical fiber. First, the transmitter and receiver pair will be tested for linearity using a variable current source. Should data confirm linearity, the voltage to current op amp configuration will be tested. This paper presents the results of these tests. This project is sponsored by Los Alamos National Laboratory