

# THE TRIVIAL NOTIONS SEMINAR

**Leon Liu**

will speak on

## **Chern-Weil theory, characteristic classes, and differential cohomology**

### ABSTRACT

Chern-Weil theory is a beautiful part of differential geometry, connecting the differential part and the topological part of the subject. On the topological side, given a principal  $G$  bundle, we can assign characteristic classes such as Chern classes and Pontryagin classes. On the differential side, if we also have a connection on the principal bundle, then classical Chern-Weil theory gives us closed differential forms representing the characteristic classes. However, there are a couple mysteries. In this talk we will review Chern-Weil theory, examine the mysteries, and then see how the formalism of differential cohomology clarifies all of the mysteries.

**Thursday, November 18, 2021**

**at 11:30 am**

**Science Center, Room 232**