

# SEMINAR IN PHYSICS

Friday, March 10, 2017

3:30-4:25 - Ross 0220

~ Refreshments! ~

## Comparing 'Math First' and 'Physics First' Pedagogical Approaches to General Relativity at the Undergraduate Level

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In the physics community, general relativity has become increasingly important in modern physics, both on the large, cosmic scale, and the small, quantum scale. Due to the difficulty of the skills required to understand the concepts presented by general relativity, study of the subject has been mostly unavailable to undergraduate students. Two ways to address this difficulty, but not the only ones, are a 'math first' and a 'physics first' approach.

## Heating Up

*Tasia Banks*  
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The Greenhouse Effect is used by the majority of scientists to describe global warming. However, there are a few who argue that global warming is the result of anthropogenic agencies.

The Greenhouse Effect can be defined as "the trapping of the sun's warmth in the planet's lower atmosphere, due to the greater transparency of the atmosphere to visible radiation from the sun than to infrared radiation emitted from the planet's surface." The radiation that is caught in the atmosphere by greenhouse gases, such as carbon dioxide, also releases radiation back into the atmosphere. This results in atmospheric temperature increase rather than Earth surface temperature increase. Earth surface temperature increase is the result of the sun and warmer temperatures in the ocean and crust.

All in all, while the Greenhouse Effect can be used to justify how the atmospheric temperature increases, it is not a proper justification for surface temperature increases that are caused by human activity.