



**Idaho State
University**

**Mathematics
and Statistics**

Undergraduate Colloquium

Causality, linking and smooth structures on spacetimes

**Dr. Vladimir Chernov
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Motivated by the works of Penrose, Low and Natario-Tod formulated conjectures relating linking and causal structure on spacetimes. These conjectures suggest that spheres of light rays through the two points (in the space of all light rays) are linked exactly when the two events are causally related (know of each other). We discuss the solution of these conjectures by Nemirovski and myself. If time permits, we will discuss another result saying that, in a sense, exotic smooth structures on spacetimes and spacetimes that are fake Euclidean spaces are not relevant for general relativity.

**Tuesday, Sept. 26
4:00 pm
PS 308**

*Pre-colloquium refreshments
beginning at 3:30 pm in PS 308*

Zoom Meeting ID: **83918530990**