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Summer Program on Transportation Statistics
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Lecture: *Application of Spatio-Temporal Methods to Identify Crash Prone Speed Conditions on Limited Access Roadways*

Speaker: John Ivan

Abstract:

Crashes on limited access roadways typically occur due to drivers being unable to react in time to avoid collisions with vehicles ahead of them either moving slower or merging unexpectedly. Prevailing traffic stream conditions with high volume and low or variable speed downstream of low volume and high speed conditions can increase the possibilities for such collisions to occur. Real time trajectories of vehicles collected through crowdsourcing methods can give information about the distribution of speeds in the traffic stream by space and time. Spatio-temporal models relating these observed speed distributions to the occurrence of crashes or near crashes can help to identify crash prone traffic conditions as they arise, offering the opportunity to warn drivers before crashes occur.