INSTITUTE OF MATHEMATICS
College of Science
UNIVERSITY OF THE PHILIPPINES
Diliman 1101, Quezon City

MATH 296 GRADUATE SEMINAR

24 February 2018, Saturday
10:00 am–11:30 am, 2nd Floor Conference Room

Optimizing Waiting Time in Toll Plaza by Queuing Theory

Kent Christian A. Castor

10:00 am

ABSTRACT. With heavy volume of vehicles arriving, toll plaza causes traffic congestion that increases the travel time. The goal of this research is to model the operation of toll plaza and make recommendations on how to minimize the waiting time of motorists passing through the toll plaza. Two nonlinear programming models minimizing the waiting time in toll plaza were developed by queuing theory. The first model identifies the optimal configuration of different toll booths that would minimize the average waiting time in the toll plaza. The second model gives the optimal speed limit prior the queuing area that maintains the queue length within a desirable value and minimizes the waiting time. The two models were tested in CAVITEX, an expressway that connects the Cavite province and Metro Manila.

A Modified Convex Variational Model For Restoring Blurred Images With Multiplicative Noise

Mary Grace P. Recreo

10:45 am

ABSTRACT. This paper proposes an extended model of del Rosario's model by adding a blurring operator. At the same time, we aim to generalize the extended model by using a similar method presented by Dong and Zeng, that is, we intend to construct a convex variational model that uses a penalty term based on the random variable $Y = \frac{1}{\eta^p}$, where $p \geq \frac{1}{2}$. First and second order gradient-based methods will be used to solve the proposed model.