



NSF-Duke-NCSU-UNC

**Joint MUMS Program Transition - SPUQ Workshop**

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**SPEAKER/ABSTRACT**

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*“Opening Up the Black Box: Gaussian Process Modeling Using Information from Partial Differential Equation Models”*

**Abstract:**

Gaussian process (GP) emulators of computer models are typically constructed based purely on data from a computer experiment using a standard stationary GP prior with product Matérn or Gaussian correlation function. This often ignores valuable engineering and mathematical knowledge about the behavior of the computer model. In this talk, I will present my research on the use of known behavior/properties of partial differential equation models solved numerically by computer codes to improve construction of GP emulators for this type of computer models.