ISTeC Data Management Workshop

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Electrical & Computer Engineering
Motivation

• Briefly describe data management needs for my research.
• Understand data management needs for the information sciences.
• Contrast information sciences vs. physical sciences.
Information Sciences

• Example areas: Control, communication, signal processing, networks, computing, systems, resource allocation, optimization.

• Academic orientation:
  Analytical, theoretical, mathematical.

• Research objects:
  Abstract, synthetic, non-physical.
Partial Differential Equation Models for Large Networks

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Partial Differential Equation Models for Large Networks

Monte Carlo simulation: > 1 week

PDE Solution: Seconds
Data Management Requirements

• Research results (reports, conference presentations and papers, and journal articles)
  – Purpose: So that our work can be used and can feed into others’ research.
  – Form of data: Pdf, postscript, Word, and other related typesetting and word-processing files.

• Program code produced in doing the research
  – Purpose: So that the detailed research methodology and results can be examined and reproduced.
  – Form of data: Matlab, C/C++, and related programming files.

• Data generated as part of this research
  – Purpose: So that the research methodology and results can be examined and reproduced, and future research results can be compared to the results from this research.
  – Form of data: Text/ASCII, binary (e.g., “.fig” used by Matlab), and other related numerical data files.